OAK RIDGE
SITE SPECIFIC
ADVISORY BOARD

NEW MEMBER
ORIENTATION MANUAL

Oak Ridge Site Specific Advisory Board
New Member Orientation Manual

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Common Abbreviations and Acronyms

These are some of the most common terms you will find in this document and hear about during your time as a member. A full list of routinely used abbreviations and acronyms is maintained by board staff and distributed at need..

BCBG..... Bear Creek Burial Grounds
CERCLA.....Comprehensive Environment Response, Compensation, and Liability Act
COLEX .....Column Exchange
D&D.....Decontamination and Decommissioning (or Demolition)
DDFO..... Deputy Designated Federal Officer
DOE ..... U. S. Department of Energy
EFPC .....East Fork Poplar Creek
EM.....Environmental Management
EMAB ..... Environmental Management Advisory Board
EMDF ..... Environmental Management Disposal Facility
EMWMF .....Environmental Management Waste Management Facility
EPA.....U. S. Environmental Protection Agency
ETTP .....East Tennessee Technology Park
EUWG..... End Use Working Group
FACA ..... Federal Advisory Committee Act
FFA..... Federal Facility Agreement
FY..... Fiscal Year
Hg.....Elemental mercury
LM..... Office of Legacy Management
MSRE..... Molten Salt Reactor Experiment
NNSA..... National Nuclear Security Administration
OREM ..... Oak Ridge Office of Environmental Management
ORNL..... Oak Ridge National Laboratory
ORR .....Oak Ridge Reservation
ORSSAB ..... Oak Ridge Site Specific Advisory Board
RCRA.....Resource Conservation Recovery Act
ROD .....Record of Decision
S&M.....Surveillance and Maintenance
SWSA..... Solid Waste Storage Area
TDEC .....Tennessee Department of Environment and Conservation
TSCAI .....Toxic Substances Control Act Incinerator
UCOR ..... URS|CH2M Oak Ridge LLC (the prime cleanup contractor for DOE Oak Ridge)
Y-12.....Y-12 National Security Complex

What is the Oak Ridge Site Specific Advisory Board?

The Oak Ridge Site Specific Advisory Board (ORSSAB) is a federally chartered citizens' panel that provides independent advice and recommendations to the U.S. Department of Energy's (DOE) Oak Ridge Environmental Management (OREM) program. OREM is responsible for cleaning up areas of the Oak Ridge Reservation (ORR) that have been contaminated with radioactive or hazardous wastes.

ORSSAB can have as many as 22 members. Individuals apply for membership and are selected by DOE to reflect the concerns of community members near the ORR. Technical expertise in the environmental field is not a requirement for membership, although DOE strives to have a good mix of technical and non-technical people on the board to reflect the community surrounding the reservation.

ORSSAB's primary responsibility is to provide advice and recommendations to DOE EM on its cleanup and waste management operations on the ORR.

Board leadership includes the chair, vice chair, and secretary who are elected annually and can serve in those positions for up to two years. ORSSAB also has non-voting agency liaisons from the Environmental Protection Agency (EPA) Region 4, the Tennessee Department of Environment and Conservation (TDEC), and DOE. The board has a DOE Deputy Designated Federal Officer (DDFO) and two Alternate DDFOs. See Appendix A for details. As part of its education mission, ORSSAB seats two non-voting student representatives from local high schools each year.

ORSSAB's primary responsibility is to provide advice and recommendations to DOE EM on its environmental cleanup and waste management operations on the ORR. In addition, the board provides input to DOE on cleanup project prioritization as it relates to OREM's annual fiscal year (FY) +2 budget request. Stewardship of areas with residual contamination following completion of cleanup work is also of significant interest to the board.

ORSSAB has committees that address particular issues. The current standing committees are EM & Stewardship and the Executive Committee. Additional committees may be formed as needed.

The Executive Committee

General board business is handled by the Executive Committee, which is composed of the elected officers of the board and the chair of the EM & Stewardship Committee. The committee holds general administrative authority to set board agendas, coordinate the work of the committees, and transact business as may be necessary between board meetings.

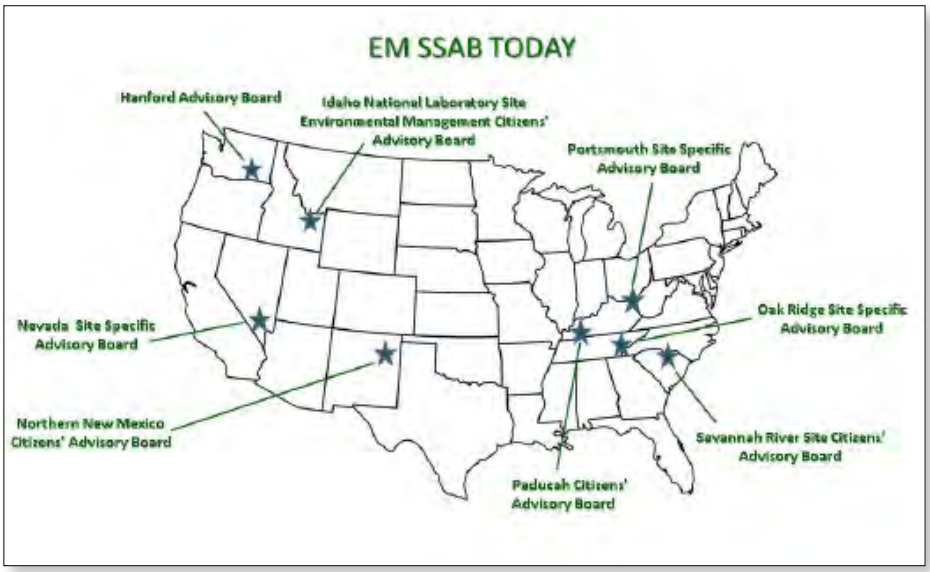
The EM & Stewardship Committee

The EM & Stewardship Committee is responsible for monitoring the major cleanup activities on the ORR as well as stewardship requirements for areas of the reservation that have been remediated but remain contaminated long-term. It creates recommendations to be considered at full board meetings. All board members are part of this committee.

Federal Advisory Committee Act (FACA)

The Oak Ridge board is one part of a national EM SSAB organization that is chartered under FACA to provide input to DOE nationwide on its cleanup activities. Currently there are seven other local boards that make up the EMSSAB. The other boards are located at:

- Hanford, Washington
- Idaho Falls, Idaho
- Las Vegas, Nevada
- Los Alamos, New Mexico
- Paducah, Kentucky
- Portsmouth, Ohio
- Aiken, South Carolina



The EMSSAB consists of eight site specific boards across the country.

All the local SSABs (sometimes designated as Citizens' Advisory Boards or CABs) provide input to DOE on its local cleanup activities, but each board has its own set of bylaws, committee structure, and operating procedures. Twice each year the leadership of the eight boards meet jointly with DOE EM representatives from Washington, DC to discuss common issues. The locations of these 'chairs' meetings usually rotate among the boards.

While each board provides its local DOE site with advice and recommendations, recommendations may also be crafted and agreed to at the chairs' meetings to send to DOE Headquarters as the EM SSAB.

Be aware that there is another national advisory board, the Environmental Management Advisory Board (EMAB), which was created to provide input directly to the DOE Assistant Secretary for EM on corporate issues relating to site cleanup and risk reduction.

ORSSAB hosted the Spring 2016 EMSSAB Chairs' meeting.

EMAB is also charted under FACA, but its membership differs from that of the EMSSAB and the site specific boards in that all members are technical experts in their fields. Currently the EMSSAB and EMAB have little interaction. Just be aware of its existence, as sometimes there is confusion about respective functions of the EM SSAB and the EMAB.

Other local groups and entities, like the Environmental Quality Advisory Board, also provide input to OREM. ORSSAB, however, is the designated communications link between the public and the OREM program. It is the only group to which DOE must respond when it makes recommendations and comments on EM activities.

Your Responsibility as a Board Member

There is a lot to learn and it can all seem overwhelming at first, but we hope this introduction to the board and the work underway on the ORR will help you get a quick grasp of what's going on.

As a member you are expected, of course, to **attend board meetings**. If you are absent from two consecutive meetings, you'll be contacted by the board secretary to determine if there is a problem. The board has the right to ask DOE to remove a member with two consecutive absences from the board. This usually doesn't happen with two absences, but three or more consecutive absences could trigger that process.

Perhaps the most difficult thing is **learning the language** if you're not already familiar with work on the reservation. There is a myriad of abbreviations and acronyms to learn and understand. We ask presenters at board and committee meetings to provide some background information on the topics they are discussing and not to use acronyms without first explaining what they mean, but it's very easy for everyone to slip into using acronyms and abbreviations. Do not be afraid to speak up and ask what an acronym or abbreviation is and what it means. Before long you'll be the one helping newer members. Similarly, don't be afraid to **ask questions at board and committee meetings**. The chances are someone else has the same question. Take advantage of experienced members and talk to them about topics to learn more. The DOE, EPA, and TDEC liaisons can also help you, as well as the ORSSAB staff.

You will also be expected to **serve on the EM & Stewardship Committee**. As you gain experience you will be expected to be an issue group member or perhaps manager for a particular topic or two. Issue groups do research on a topic and draft initial recommendations for the committee to discuss further. ORSSAB staff and DOE liaisons provide help to issue groups during the drafting process.

Go on a tour of the reservation. Staff will set up tours for new members. Tours of particular facilities relevant to a monthly meeting topic are regularly scheduled during the time between board and committee meetings; take advantage of those. On occasion, training sessions and workshops are also organized. These are always good opportunities to learn more about board-related work and cleanup programs.

Staff regularly provides a listing of educational opportunities that are beneficial to board members, including meetings, workshops and conferences that may involve travel. Request to attend those opportunities when you can.

Requests for travel should be sent to staff. They are approved by the Executive Committee. OREM provides reimbursement for many associated expenses for approved travel. The OREM travel coordinator will assist you with setting up flights, hotels, etc.

ORSSAB members tour the Low Level Gaseous Waste Facility at ORNL in 2019.

How Recommendations Are Made

ORSSAB can make recommendations on plans or work underway just about any time it feels a recommendation is necessary. Usually, though, a recommendation is generated as the result of a presentation to the full board or the EM & Stewardship Committee. DOE can also explicitly request a recommendation on a particular issue or topic. While not common, an individual board member or members can submit a recommendation to the board.

The Recommendation Process

1. Topic presentation given to the board at its monthly meeting
2. EM & Stewardship Committee decides to issue a recommendation (or not)
3. Issue group, led by an issue manager, creates a draft document
4. Issue manager presents the draft for discussion and vote at committee meeting
5. Approved recommendation sent to the Executive Committee
6. Executives vote to put the recommendation to the full board or back to committee for edits
7. Board votes on the recommendation
8. Approved recommendation sent to DOE, which must respond

The job of writing a recommendation is delegated to the EM & Stewardship Committee. At the committee level, an issue manager is assigned to work on the topic and is responsible for drafting a recommendation if research supports that one is warranted. Several other members generally serve on the issue group for each particular topic. Members are encouraged to serve on at least two issue groups

After the recommendation is drafted, it is reviewed by the committee and revisions may be made. Once the committee votes on the recommendation, it is sent to the Executive Committee. The Executive Committee reviews it and agrees to put it before the entire board for discussion unless there is some reason it feels the recommendation is not ready to go to the board, in which case it is returned to the committee.

Upon approval, the recommendation is then presented to the board by the issue manager. If the recommendation is passed by the board, then it is sent to either the OREM manager or to an appropriate person at DOE Headquarters. If the recommendation is approved but there are some members who cannot support the recommendation, a minority opinion may be written and attached to the recommendation.

DOE is required to respond to the recommendation. It can either accept the recommendation or decline it, but it must answer the board. Once a response is received, it is reviewed to determine if the response is adequate or if it needs follow up with a subsequent recommendation.

Example: Environmental Management Budget Requests

Each year ORSSAB is asked to provide input to the DOE OREM Program regarding the development of its budget request to headquarters. Budget requests are made for the fiscal year two years beyond (FY+2) the current fiscal year.

The Executive Committee and the EM & Stewardship Committee review previous presentations and DOE's Oak Ridge cleanup priorities, which help DOE set its budget requests to headquarters. The committee considers various cleanup scenarios developed by DOE that consider funding, technical challenges, availability of resources, etc. From these scenarios the committees develop a recommendation to DOE on how work should be prioritized for Oak Ridge, which is then voted on by the board.

What is the DOE EM Program?

DOE's EM program is responsible for waste management and cleaning up areas operated by the department that have been contaminated by radioactive or hazardous waste as a result of nuclear weapons development, nuclear energy research activities, or waste disposition. Some of the waste sites date to the World War II Manhattan Project, which was the massive effort to develop the first atomic bomb, or were involved in Cold War-era activities or both.

The DOE EM Program is responsible for cleaning up the Oak Ridge Reservation.

The DOE Office of EM was established in 1989 to oversee the cleanup of DOE facilities throughout the United States. That same year the ORR was placed on the EPA National Priorities List as a site requiring cleanup. As a result, the EM program was initiated in Oak Ridge.

Oak Ridge Office of Environmental Management (OREM)

Oak Ridge is one of the original sites that was part of the Manhattan Project. Its three main plants of K-25, Y-12, and X-10 worked to come up with methods to enrich uranium or produce plutonium for use in atomic weapons. Y-12 is now Y-12 National Security Complex (Y-12); K-25 was later renamed East Tennessee Technology Park (ETTP); and X-10, which refers to a graphite reactor facility on the site, is now Oak Ridge National Laboratory (ORNL). Each plant played discrete roles in the work and pursued different methods. As a result of that work and subsequent work in nuclear research, parts of the reservation are contaminated with radioactive or hazardous waste. It's EM's job to clean up these areas, and ORSSAB provides input on that work.

At Y-12 OREM is working to address excess contaminated facilities, remove mercury soil and groundwater contamination, and enable modernization that allows the National Nuclear Security Administration (NNSA) to continue its crucial national security and nuclear non-proliferation responsibilities. At ORNL OREM is addressing risks at excess contaminated facilities and working to process and disposition decades of waste associated with isotope research and production. The program is enhancing safety at ORNL and making way for DOE to continue its advanced supercomputing, materials, and energy research.

The primary mission of OREM is to protect the region's health and environment, ensure the department's vital missions locally, and finally, to make land clean and available for future use. OREM's work is guided under provisions set out by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Cleanup administrative processes are set out in the ORR Federal Facility Agreement (FFA), signed by DOE Oak Ridge, EPA, and TDEC and implemented January 1, 1992. For more information on the FFA, see Appendix B.

In addition to OREM, other DOE programs at the ORR are the Office of Science, the NNSA, and the Nuclear Energy program. Because these programs have active missions, OREM collaborates with them when it comes to cleanup activities at Y-12 and ORNL. They must all work together to make sure current missions are not interrupted while cleanup activities are underway.

Let's take a look at the areas where OREM is performing cleanup and ORSSAB provides advice. OREM publishes the annual Cleanup Progress Report to provide details on work completed and underway. The latest copy is included in your binder. There are many projects and we can't review all of them, but the following are the major areas. You'll learn about additional cleanup operations as you serve on the board.

The three main areas — ETTP, ORNL, and Y-12 — are within the confines of the ORR, which totals more than 30,000 acres. The entire ORR is within the city limits of Oak Ridge, which is unique to all the other sites of the EM SSAB. It's important to understand that only a small portion of the ORR is impacted by radioactive or hazardous waste contamination. More information on individual projects can be found in DOE fact sheets included in your binder. They are updated regularly at energy.gov/orem/services/site-cleanup/cleanup-fact-sheets.

East Tennessee Technology Park (ETTP) - formerly the K-25 Gaseous Diffusion Plant

The K-25 Gaseous Diffusion Plant was one of the plants in Oak Ridge that was built to enrich uranium for use in weapons and later for nuclear power plants. Its main buildings were the process facilities for enriching uranium. The first was K-25, which was the world's largest building when it was constructed in 1943. After World War II, additional uranium processing facilities were built: K-27, K-29, K-31, and K-33. They were later shut down in stages, and all enrichment activities ended by 1987. In addition to the five process buildings, scores of other support buildings were built at the site.

In 1997 the site was renamed East Tennessee Technology Park (ETTP) as part of OREM's goal to convert the site into a commercial industrial park. Success has depended on the decontamination and demolition (D&D) of almost all the structures, the remediation of contaminated soil, and the monitoring/treatment of contaminated groundwater. In 2020, OREM achieved its Vision 2020 goal of completing core cleanup at the site, which included demolishing more than 500 structures and addressing major areas of soil

The majority of the Oak Ridge Reservation is within the boundaries of the City of Oak Ridge. The three main areas in the reservation are East Tennessee Technology Park, Oak Ridge National Laboratory, and Y-12 National Security Complex.

The K-25 Gaseous Diffusion Plant was renamed East Tennessee Technology Park in 1997. In 2020, OREM achieved its Vision 2020 goal of completing core cleanup at the site, which included demolishing more than 500 structures and addressing major areas of soil contamination. This is how the site looked before major demolition work began.

contamination. It marked the first time in the world an entire uranium enrichment complex had been removed, and it is also DOE's largest completed environmental cleanup effort to date.

DOE transfers appropriate pieces of remediated land back to the community for the creation of a private-sector industrial park. So far, more than 1,800 acres have been transferred and an additional 900 acres are slated for transfer in the years ahead. OREM has also transferred some buildings intact, emergency services, rail lines, and most of the domestic water supply and sanitary sewer infrastructure, and it completed modifications to most electrical infrastructure, allowing it to be transferred. Another 3,000 acres have been placed in a conservation easement that is open to the public for recreational use, and more than 100 acres have been set aside for historic preservation efforts.

Summaries of Major ETTP Projects

K-1200 Centrifuge Complex: Crews in June 2020 completed demolition of this complex, which included facilities constructed between 1975 and 1985 and which spanned more than 235,000 square feet. The complex was built to develop, test, and demonstrate the ability to enrich uranium using centrifuge technology. The complex included some of the largest and most recognizable structures remaining at ETTP, including the site's tallest facility, at 180 feet.

Poplar Creek Facilities: Before demolition began in this area in 2017, the Poplar Creek Facilities were comprised of 11 large buildings and numerous structures built in the 1940s and 1950s to support the site's former nuclear program. OREM finished demolishing the last two buildings, K-131 and K-631, in fall 2019. Building K-131 was built to provide purified uranium hexafluoride to the uranium enrichment cascade. Through the years, it was used for a variety of other purposes until Oak Ridge's uranium enrichment operations ceased in 1985. Building K-631 was used to withdraw gaseous depleted uranium hexafluoride from the cascade, convert it to liquid, and transfer it into transport cylinders.

Gaseous Diffusion Plant: In 2016, Oak Ridge became the first site in the world to successfully remove all its former gaseous diffusion uranium enrichment buildings (K-25, K-27, K-29, K-31, and K-33). With a footprint of 4.5 million square feet, decontamination and demolition of the five buildings was difficult and spanned a decade. Now, ETTP is safer, cleaner, and has large parcels of land that are available for redevelopment.

Stored Material

ETTP was the storage site for a variety of waste materials including low-level radioactive waste, PCB waste, depleted uranium oxide, sodium, and nickel. More than 26,000 containers of legacy low-level and mixed low-level waste were treated and disposed by 2005. In fall 2020, crews removed the last of all containers of stored wastes from ETTP, eliminating all wastes managed under the Resource Conservation and Recovery Act (RCRA) from the site. OREM also excavated a waste burial ground and contaminated rock quarry.

Groundwater Strategy

Some areas at ETTP contain contaminated groundwater plumes. Planning took a major step forward in 2023 when the U.S. Environmental Protection Agency and Tennessee Department of Environment and Conservation approved OREM's proposed plans for addressing groundwater in the Main Plant and K-31 and K-33 areas. A monitored natural attenuation Record of Decision (ROD) was approved for this area in 2024. In the Main Plant Area, a proposed plan focusing on six chlorinated volatile organic compound (CVOC) plumes representing some of the highest contaminant concentrations with a preferred enhanced in-situ bioremediation treatment alternative was approved in 2023. The Interim ROD for enhanced insitu bioremediation was approved in 2024 and additional investigations for the remaining plumes are planned. Zone 1 Groundwater Plume investigations are in process following the Remedial Investigation Work Plan (RIWP), which was approved in 2022. An addendum to the RIWP for additional investigation in the K-1085 area was transmitted to EPA and TDEC in 2024.

Soils Remediation

ETTP is divided into two zones. Zone 1 encompasses approximately 1,400 acres wrapping around the site's northern, western, and southwestern boundaries. In September 2000, DOE, EPA, and TDEC agreed to a path forward for the cleanup of ETTP. This agreement includes an interim decision on soil remediation in Zone 1. DOE, EPA, and TDEC signed the ROD for Interim Actions in Zone 1 in November 2002. All required soil-remediation projects in Zone 1 have been completed and No Further Action decisions have been reached. The exception is the K-720 Fly Ash Pile, which has been moved to the Zone 1 Groundwater Plumes project so that an integrated approach can be taken. A Final Zone 1 Soils ROD is being prepared. Zone 2 encompasses approximately 800 acres within the former main industrial area of ETTP. Soil is contaminated primarily with metals, chlorinated volatile organic compounds (CVOCs), and radionuclides throughout Zone 2 that could pose future risks or contribute to groundwater contamination. DOE, EPA, and TDEC signed the ROD for Soil, Buried Waste, and Subsurface Structures in Zone 2 in April 2005. The selected alternative identified in the ROD calls for removal of contaminated soil to a depth of ten feet, buried waste removal from the K-1070-B Pond area, and partial removal of the K-1070-C/D classified burial ground. Soil removal was extended to include deeper soil that could contribute to groundwater contamination. All remaining soil remedial actions covered by the Zone 2 Soils ROD were completed in 2024 – achieving Vision 2024.

An aerial view of the Oak Ridge National Laboratory campus.

Oak Ridge National Laboratory (ORNL)

Originally known as Clinton Laboratories, ORNL was established in 1943 to carry out the pilot-scale production and separation of plutonium for the World War II Manhattan Project. You may also hear it referred to as X-10, which was the designation of the graphite reactor facility there. The lab was also highly involved in isotope research and production. From this foundation, ORNL has evolved into a unique resource for addressing important national and global energy and environmental issues. The EM program is conducting projects that will enhance safety at the site and enable the lab's globally important research to continue and grow.

ORNL is a challenging site for remediation for many reasons. It is an active operational research center, having dealt with a multitude of chemical elements, compounds, and radioactive materials. Cleanup must be performed in a manner that does not impact current research activities.

Uranium-233 Disposition Project

A large inventory of uranium-233 (U-233) is stored at ORNL. Since U-233 is a special nuclear material that requires strict safeguards and security, efforts are underway to remove the entire inventory from Building 3019, which is the oldest operating nuclear facility in the world.

The project includes two phases. The first phase involved directly disposing approximately half of the inventory, while the second phase involves extracting thorium from the remaining U-233 inventory for next-generation cancer research before downblending to enable its disposition. OREM completed the first phase of the project in 2017 and began phase two in 2019. In 2022, workers began hot-cell processing to disposition the remaining high-dose U-233 inventory, and that work is scheduled to continue through the late 2020s. Through a partnership with TerraPower, employees are able to extract rare nuclear isotopes during processing operations to use for next-generation cancer treatment research.

Excess Contaminated Facilities

ORNL has approximately 150 excess contaminated facilities, mostly in the central campus area, that require attention. Many of these buildings are in disrepair and contain significant hazards and risks that could threaten ongoing missions at the site. OREM has several projects underway that are removing risks and stabilizing facilities. Crews are actively addressing numerous facilities in the central campus area, which houses aging, former research reactors and isotope production labs. In 2023, crews completed demolition of the Low Intensity Test Reacter. Demolition of the Oak Ridge Research Reactor is scheduled to begin in 2027.

Bulk Shielding Reactor

The Bulk Shielding Reactor complex was built in the 1950s for radiation shielding studies as part of the federal Aircraft Nuclear Propulsion Program. It included a 27-foot-deep reactor pool filled with water to shield the radioactive components contained in the pool. Its mission changed to a general-purpose research reactor in 1963 and was shut down permanently in 1991. OREM crews in November 2022 completed demolition of the Bulk Shielding Reactor, also known as Building 3010, marking the first-ever demolition of a reactor in the central campus area of ORNL.

An aerial view of the Molten Salt Reactor Experiment.

Molten Salt Reactor Experiment (MSRE)

The Molten Salt Reactor operated from 1965-1969 to test the concept of a reactor fueled by molten salt that flowed through the reactor chamber. When the reactor was shut down, the salt was drained into three storage tanks, where it solidified.

The tanks are located in underground, concrete-shielded cells. The reactor fuel in the salt mixtures has been removed, but the salts themselves are contaminated and still need to be properly disposed. OREM performed engineering evaluations for the building to determine how to reduce risks and how best to deal with the remaining salts. Results from that and other analyses are informing new plans, including ongoing upgrades to the electrical and ventilation systems that will enhance safety in the building.

Building 3026 Hot Cells

Building 3026 dated to the Manhattan Project and the postwar era, when one of the ORNL's primary missions was the production of radioactive isotopes for medical, research, and industrial uses. The outer structure was demolished in 2010, but the 'hot cells' from inside the building remained. They were sealed with fixative while plans were made for final disposition. In April 2012, four of the six hot cells were demolished and disposed. Crews installed a six-story protective cover over the final two hot cells to avoid any potential impacts to ongoing missions in nearby facilities. The fifth hot cell is down, and in 2025, crews demolished the B sub-cell portion of the final hot cell.

Central Stack System

The 3039 stack, built in 1950, has been in operation almost continuously since its construction. The 250-foot stack discharges a total gas volume annually of about 66 billion cubic feet. Exhaust gases from the various facilities at ORNL are vented through the central stack. Major repairs to the 3039 Stack were completed in 2024, allowing continued safe operation.

ORNL's Central Stack is part of an aging ventilation system that has reached the end of its usefulness.

Tank W-1A/Corehole 8 Plume

The Tank W-1A site received waste from nearby process Building 3019. Over the years a myriad of radioactive isotopes, leaked from the tank and the pipeline into the surrounding soil and groundwater. In January 2012 the tank was successfully removed. The leaks also resulted in an extensive contaminated groundwater plume known as the Corehole 8 plume. New wells and a pump system were installed in 2012 to treat groundwater. Ongoing monitoring shows the plume has been contained.

Two former waste disposal sites near ORNL have been remediated.

Bethel Valley Burial Grounds

The Bethel Valley Burial Grounds, which have been remediated, include the former waste disposal sites Solid Waste Storage Areas (SWSA) 1, in the southern portion of the ORNL central campus, and SWSA 3 West, away from the main central campus of ORNL.

DOE continues to monitor the sites with regular inspections and water sampling. SWSA 1 was a source of contaminant release in Bethel Valley. To stop the contaminant releases, work was done to place a low permeability, multi-layer cap over the waste area. Capping SWSA 1 was completed in 2010. SWSA 3 work included removal and disposal of 'hot spot' contaminated soils under a multilayer cap. Construction, which was completed in 2011, included placing a cap over SWSA 3, the adjacent Closed Scrap Metal Area, and some of the contaminated soil areas.

Bethel Valley Soils and Sediment Project

This project includes field walkover assessments and soil/sediment sampling to identify areas where environmental releases have occurred and lab research activities have been conducted. Characterization data will be used to determine if cleanup actions are necessary and what the boundaries of the contaminated sites are.

Melton Valley

Melton Valley is located southwest of the main ORNL campus. A large portion of that area was used for waste burial. In 2006 remediation work was completed on a number of burial grounds, storage pits, and trenches. What remains to be addressed in Melton Valley are some inactive reactors, watershed area ecology, sediment, and groundwater.

A line of monitoring wells has been installed on the west side of the Clinch River to ensure contamination is not migrating away from the Melton Valley burial grounds in groundwater underneath the Clinch River and into private wells on the other side of the river. Clean water has been provided to the property owners to ensure they are not exposed to any harmful contaminants and to prevent the wells from pulling the groundwater from Melton Valley. The wells are monitored to determine if there is groundwater flow and to detect potential contaminants.

Trench 13

During remediation of Melton Valley in 2005, workers excavating an area known as Trench 13 encountered glass containers holding materials that could spontaneously ignite on contact with air. When the excavators broke one of the vessels, there was brief flare up. Work was suspended and the trench was stabilized and covered. DOE has requested input from ORSSAB on the management of the material that remains in the trench. It is also preparing a revised engineering evaluation for disposal of the waste.

Y-12 National Security Complex (Y-12)

Y-12 was built during World War II to enrich uranium. In the years since World War II, Y-12's mission has expanded to focus on dismantling nuclear weapons components, while also serving as one of the nation's storehouses for special nuclear materials.

Historically, Y-12's operations used large amounts of mercury. During the 1950s and 1960s, an estimated 700,000 pounds of mercury leaked from equipment into the buildings, basements, and surrounding environment. Keep in mind that mercury (often abbreviated as Hg) is much heavier than other liquids. A pound of mercury is slightly more than one fluid ounce by volume. A gallon of mercury weighs almost 113 pounds.

Ongoing efforts to capture and treat water leaving the facility have significantly reduced mercury in nearby creeks and streams.

An aerial view of Y-12.

Excess Contaminated Facilities

Y-12 has more than 90 excess contaminated facilities, and many qualify as higher-risk facilities. These buildings have not operated for decades, are in disrepair, and contain significant hazards and that could threaten ongoing missions at the site. OREM has several projects underway that are removing risks, stabilizing facilities, and removing the structures.

Criticality Experiment Laboratory

The former Criticality Experiment Laboratory, also known as Building 9213, was built in 1949 and was used to conduct experiments with fissile uranium isotopes for nuclear reactor designs. Employees performed more than 9,700 experiments there in its first decade, and the facility later supported the Oak Ridge National Laboratory's High Flux Isotope Reactor program. OREM in October 2022 completed demolition of the two-story, 24,000-square-foot building, which had been closed since 1992.

Alpha 2

Alpha 2 was a former Manhattan Project-era enrichment facility that stood 80 feet tall, measured 325,000 square feet and covered 2.5 acres of land. Preparing the facility for demolition was itself a monumental task, requiring four years of work beginning in 2020. It involved meticulous removal of radiological and chemical hazards from inside the facility and rerouting active utility lines — including steam, air, gas and water — outside the facility that are essential to Y-12's operations. That work was made possible through collaboration by a mix of highly skilled employees versed in a wide array of fields including characterization, safety, waste handling, project management, craft and engineering. Alpha 2's teardown began in September 2024 with crews finishing above grade-demolition in January 2026.

Alpha 4

Alpha 4 housed equipment in the 1950s and 1960s that used large amounts of mercury for their operations. Today, the facility is in a deteriorated state and categorized as a high-risk facility. to bring the massive 500,000-square-foot facility, which spans 13 acres, to the cold-and-dark stage. That process involves removing all utility sources to the building. These efforts are moving OREM closer to addressing one of the largest high-risk buildings at the site. Alpha 4 is one of the facilities with the highest levels of mercury contamination (along with Alpha 5 and Beta 4) at Y-12. Workers are sampling and marking potential hazards and removing combustible materials from Alpha 4. They are also isolating the structure from any potential hazardous energy sources. Crews have already retrieved 6.5 tons of mercury from the facility, demolished the equipment on the west side, and deactivated the equipment on the east side. Deactivation work at Alpha 4 is expected to continue for several years before demolition can begin.

Alpha 5, Beta 4 Legacy Material Disposition

Alpha 5 and Beta 4 are some of the largest buildings at Y-12. Both were used for uranium processing and other operations. Significant cleanout activities concluded in 2012. The contents of the buildings included non-process equipment, containers, tools, and miscellaneous contaminated material. Characterization of building materials and equipment that was physically connected to the building was also completed. Removal of the buildings is complicated by their proximity to active facilities at the site and the fact that they are inside the site's protective security perimeter.

A view of demolition beginning on the six-story, 255,000-square-foot Building 9207, the final building in the former Biology Complex at Oak Ridge, which was demolished in 2021.

Biology Complex

In 2022, OREM finished clearing more than 18 acres that once housed the former Biology Complex at Y-12. The Biology Complex, originally comprised of 11 buildings, was first used as part of the uranium enrichment process during World War II but was later used for research that led to strides in understanding genetics and the effects of radiation. In early 2018 two smaller buildings in the complex were demolished. In November 2020, OREM and cleanup contractor UCOR began demolition of the final remaining buildings in the complex, with demolition of the final structures completed in 2021. The site will be the location of the National Nuclear Security Administration's (NNSA's) new Lithium Processing Facility (LPF).

East Fork Poplar Creek (EFPC)

Remedial actions have reduced mercury in EFPC significantly, but concentrations in the tissue samples of some species of fish are still above safe levels. In early 2019, OREM announced an expansion of its partnership with researchers at the ORNL Aquatic Ecology Laboratory to advance the understanding of mercury's impact on fish, wildlife, and streams. Scientists will also support OREM in developing new technologies and remedial solutions.

Bear Creek Valley

Waste management and disposal activities in Bear Creek Valley, mostly with waste generated from past uranium processing at Y-12, contributed to the contamination of the soils, surface water, and groundwater.

Remediation efforts have significantly reduced the concentration and quantity of uranium and secondary contaminants in Bear Creek.

Bear Creek Burial Grounds (BCBG)

BCBG is located about two miles west of Y-12 and just west of EMWMF. From 1955 to 1993 the area was used for disposal of uranium turnings and industrial waste contaminated with uranium. To close the site, DOE installed a concrete blanket over the burial grounds to mitigate the risk posed by the shock-sensitive materials. DOE continues to monitor the site through groundwater sampling and address issues such as soil settling. More extensive remediation work will be required in this area. An initial draft of a plan to remediate BCBG was developed in 2008.

Environmental Management Waste Management Facility (EMWMF)

EMWMF is the on-site CERCLA waste disposal facility in Bear Creek Valley that accepts low-level radioactive and other hazardous wastes from OREM demolition activities. Not all waste goes to EMWMF. Waste that has no radioactive or hazardous components can go to one of three landfills just south of Y-12. Waste with higher levels of contamination is shipped off-site for disposal.

EMWMF has been expanded several times and is close to its capacity of 2.2 million cubic yards of material. It is expected to reach capacity in the late 2020s. With additional capacity required to complete cleanup at Y-12 and ORNL, OREM is working to build another onsite disposal facility to maintain its momentum and finish that work.

Environmental Management Disposal Facility (EMDF)

OREM began water and soil sampling for the EM Disposal Facility (EMDF) at the preferred site, approximately one mile from EMWMF, in early 2018, and a draft proposal for public comment was released later that year. Construction activities continued in FY 2025 and design efforts are underway. Workers began fieldwork for the Groundwater Field Demonstration in February 2024 and completed gathering information for that effort in April 2026. They completed additional utility extension construction in April 2025.

Board members should expect to see additional studies and documents related to the project during their terms. DOE would like to open the site prior to closure of EMWMF to ensure continuity of use. Construction of EMDF will allow OREM to complete its cleanup responsibilities at ORNL and Y-12.

Stewardship

Stewardship activities on the ORR are followed by the EM & Stewardship Committee. The definition of stewardship as it relates to cleanup of radioactive/hazardous waste on the Oak Ridge Reservation is:
The definition was developed by the End Use Working Group. Through their work, Oak Ridge was one of the first sites to address the need for long-term stewardship of contaminated sites. Simply put, areas where contamination has been left in place after remediation must be continually monitored and protected to make sure that the contamination does not escape its confines or that humans do not disturb the area, which could lead to harmful personal or environmental exposure.

A warning sign is one example of stewardship physical controls to protect the public from contaminated areas.

ORSSAB's mission related to stewardship was established in the Final Report of the Oak Ridge Reservation End Use Working Group and the Stakeholder's Reports on Stewardship, volumes 1 and 2 For more on the End Use Working Group, see Appendix B.

DOE is required to perform stewardship activities under several different agreements and internal directives. Once EM completes cleanup missions at sites, DOE transfers them to its Office of Legacy Management (LM), which was created in 2003. LM is responsible for ensuring that DOE's post-closure responsibilities are met and for providing DOE programs for long-term surveillance and maintenance, records management, work force restructuring and benefits continuity, property management, land use planning, and community assistance.

Specific Stewardship Functions and Controls

The success of stewardship is dependent on the activities that are conducted to ensure remediation remains effective, access and monitoring systems are functional, and that the necessary location and cautionary information is always accessible to the public.

The Six Elements of Stewardship

- Monitoring – regular sampling of all contaminated media to identify possible failure of physical controls and to continually understand the nature and extent of contamination
- Maintenance – regular upkeep of systems and controls to ensure long-term effectiveness
- Surveillance – regular oversight to ensure all necessary activities occur
- Enforcement – legal constraints to maintain protection of people and the environment
- Inspection and reevaluation – periodic review of systems to ensure continued need and effectiveness
- Public participation – involvement of the public to ensure citizen concerns are addressed and information is available

In most cases where waste has been selected to remain in the ground on the ORR, land use controls must be conducted in perpetuity because of the long-lived radionuclides or other hazardous wastes that are being protected.

Physical controls are barriers that limit public access.

These include:
- Fences
- Natural barriers – trees, surface water, slopes, and buffer zones
- Warning signs and markers
- Security patrols

Institutional controls are legal provisions such as ordinances, deed restrictions, and state and federal laws that control land uses. For more detailed information on institutional controls see the Stakeholder Reports on Stewardship.

Stewardship Information

Stewardship information includes the locations, amounts, and characteristics of residual contamination. Deed restriction information can be found in county land records offices after land parcels have been remediated. It can also be found in a Stewardship Map Reference Book, a companion piece to the Stewardship Map that ORSSAB helped develop. Information is also available on the DOE Oak Ridge Geographical Information System (emgis.oro.doe.gov) and the Oak Ridge Environmental Information System (ucor.com/oreis.html).

Monitoring wells were drilled on the west side of the Clinch River to determine if any contamination was migrating from DOE property into groundwater on private property

Specific Areas Where ORSSAB is Interested in Stewardship:

East Tennessee Technology Park

When cleanup work is completed at ETTP, there should be little residual contaminated waste left at the site, but ORSSAB is interested in making sure the area is sufficiently cleaned up for new industry to relocate there with little or no need for stewardship by DOE. If there are remaining concerns at the site, DOE will always be responsible for them. However, there are roles that others will be responsible for if the area is available for industrial use, such as excavation permitting, underground utilities, and deed restrictions. For more information, see page 6.

Bethel Valley

An area of current stewardship concern is the Bethel Valley Burial Grounds Solid Waste Storage Area 3. SWSA 3 is not in the ORNL central campus and was cleaned up for recreational use. Stewardship controls will be put in place from this area westward to the Clinch River. For more information, see page 9.

Melton Valley
Melton Valley, in the southwest portion of the Oak Ridge Reservation, was used for a wide range of waste disposal methods for more than 50 years. Waste disposal areas included large solid waste dumps, pits, trenches, and waste injected into the earth's strata.

A large remediation effort was completed in 2006. OREM cleaned up some source areas and implemented protections for surface and groundwater from waste that was left in place. ORSSAB has a particular interest in making sure this area is well-protected from a stewardship standpoint because of the thousands of years that this waste will be an environmental and human health concern.

As previously mentioned, monitoring wells have been installed across the river from Melton Valley to detect any contamination leaving Melton Valley and moving off the ORR. For more information, see page 10.

Bear Creek Valley
Bear Creek Valley was used for disposal of uranium and associated waste from operations at Y-12 (see page 11). The only remaining, active waste management site in this area is EMWMF, which accepts low-level radioactive waste from cleanup and demolition projects across the Oak Ridge Reservation (see page 13).

Former waste disposal areas that have been remediated and closed include the Boneyard/Burnyard, the Oil Landfarm, and the S-3 Ponds. While remedial actions in years past have reduced contamination into nearby Bear Creek, contaminant levels in the creek near the Bear Creek Burial Grounds still do not meet water quality standards set by the state. Additional options are being considered to address portions of the valley to lessen the problem. For more information, see page 13.

While not in the immediate vicinity of the Bear Creek Burial Grounds, the White Wing Scrapyard is nearby. It also was used as a disposal area for scrap and debris from Oak Ridge plant operations. Surface debris removal was completed in 1994, but a significant volume of waste is buried at the site.

Historic Preservation
Another part of stewardship is the responsibility to document the important activities of people in Oak Ridge, both during the Manhattan Project and in important research and development that followed. ORSSAB was asked by DOE to provide input on historic preservation options for the Oak Ridge Reservation. In response, ORSSAB cosponsored a meeting to gather input from the public on how best to preserve the historic significance of the K-25 Building. A recommendation followed. A follow-up recommendation offered input on a reservation-wide historical program that includes ORNL and Y-12.

The board was also active in an effort that led to the creation of an organization called the Center for Oak Ridge Oral History, which preserves the memories of those involved in the history of the City of Oak Ridge. Nearly 1,000 oral histories were collected as part of that effort.

ORSSAB is a consulting party to a memorandum of agreement for historic site interpretation at ETTP. The ORSSAB Stewardship Committee took the lead in commemorating the K-25 Building at ETTP, including the K-25 Virtual Museum launched in 2015 (k-25virtualmuseum.org), the K-25 History Center, which opened in February 2020, and the William J. Wilcox, Jr. K-25 Interpretive Center, which opened in 2025. The history center offers visitors 7,500 square feet of exhibits with more than 250 original artifacts on display and interactive galleries commemorating the history of K-25 and providing context for the way it fits into the national story. At the nearby K-25 Interpretive Center, visitors can get an overview of the scale and scope of the original K-25 building.

Visitors explore the many exhibits and interactive displays in the K-25 History Center during the center's grand opening in February 2020.

The board continues to provide input and follow progress for local efforts on the Manhattan Project National Historical Park (nps.gov/mapr), which was created via an agreement between DOE and the National Park Service in 2015.

Conclusion

We hope this introduction is helpful in giving you an initial understanding of the work on the ORR. You will learn more as you attend meetings, go on tours, travel to conferences, and participate in other board activities.

We encourage you to participate in the board's Facebook Page, facebook.com/ORSSAB; stay informed with our weekly email newsletter; and review activities in our quarterly newsletter, *The Advocate*. Back issues are available on our website, energy.gov/orssab.

Additional information is available in specific training materials for individual committees, as well as supplemental material (fact sheets, reports, histories, guidance, board bylaws, etc.). Contact board staff members or the board's Alternate Deputy Designated Federal Officer for any assistance.

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Appendix A

Board Officers, Deputy Designated Federal Officer, Liaisons

ORSSAB can have as many as 22 voting members. Through an application process they are chosen by DOE to reflect diversity of occupations, interests, gender, and race of persons living near the ORR. Technical expertise is not a requirement to be a member of the board.

Members are chosen to serve two-year terms, and they can serve a total of three terms. The officers include a chair, vice chair, and secretary. Officers are nominated at the board's annual planning meeting in August and are elected at the September meeting. The board's fiscal year is October through September and officers assume their seats at the October meeting. Officers can serve in a position for two years.

Melyssa Noe
ORSSAB DDFO

Deputy Designated Federal Officer (DDFO)
Each FACA committee, like ORSSAB, is required to have a Designated Federal Officer (DFO) who works closely with the board. The DFO is based in DOE Headquarters and is responsible for working with the nationwide EM SSAB.

The current DFO is Kelly Snyder. Since the DFO cannot attend all of the meetings of the individual SSABs, she has designated individuals at each site to be Deputy Designated Federal Officers (DDFO). The DDFO for ORSSAB is Melyssa Noe. Responsibilities of the DDFO include:

- Approve agendas and attend board meetings
- Ensure required records on board costs and memberships are maintained
- Certify the minutes of the meetings
- Ensure board meetings are publicly announced and accessible
- Inform the board of programs, projects, and activities directly affecting the board's mission and purpose
- Work closely with the board to prioritize issues
- Approve the annual work plan that includes goals and priorities
- Appoint an Alternate DDFO to assist in the management of the SSAB and supporting activities.

Roger Petrie
ORSSAB Alternate DDFO

Abby Hill
ORSSAB Alternate DDFO

ORSSAB Alternate Deputy Designated Federal Officers
As noted above the DDFO often appoints Alternate DDFOs to work closely with the board. Roger Petrie and Abby Hill are the board's Alternate DDFOs and its first points of contact with OREM. You will see an Alternate DDFO at all board and committee meetings. The Alternate DDFO's responsibilities include many of those listed for the DDFO above. In addition:

- Assist in the management of the board, provide guidance, and support its activities
- Ensure board presentations are developed and provided
- Facilitate membership appointments
- Ensure FACA requirements are met and provide annual FACA report to DOE Headquarters
- Facilitate board member training and travel needs
- Ensure that DOE responds to recommendations and track action items
- Provide oversight of members' conflict of interest issues

Erik Olds
OREM Manager

Teresa Robbins
OREM Deputy Manager

Kristof Czartoryski
TDEC

Samantha Urquhart-Foster
EPA

Agency Liaisons
In addition to the DDFO and alternates, the board has several agency liaisons from DOE, EPA, and TDEC. The agency liaisons attend the board meetings but do not vote. Their responsibilities include: Providing agency opinions on EM issues, recommending board topics and prioritization, and participating in board discussions

Samantha Urquhart-Foster is the standing liaison from EPA and Kristof Czartoryski represents TDEC with the board. Other members of those organizations may fill in from time to time.

Likewise, while Melyssa Noe serves as the Board's official liaison, other DOE leadership may also present to the board, including Erik Olds, OREM Manager, and Teresa Robbins, OREM Deputy Manager.

Appendix B

Important Documents and Publications

There are a number of documents and publications that are the foundation for ORSSAB's existence and mission. The following are the main instruments that set the stage for ORSSAB's work:

Federal Advisory Committee Act Charter
As mentioned earlier the EMSSAB is chartered under the Federal Advisory Committee Act (FACA). For more about EMSSAB, see the separate tab in your binder. Under that umbrella organization operate eight local (site specific) boards in Idaho, Kentucky, Nevada, New Mexico, Ohio, South Carolina, Tennessee, and Washington State. These local boards exist as long as work needs to be done. In places where work has been finished site specific boards have been disbanded.

Local site board membership is composed primarily of people who may be directly affected by the need for site cleanup. Members may include stakeholders from local governments, environmental and civic groups, labor organizations, universities, industry, and other interested citizens.

Under the FACA charter, at the request of the DOE Assistant Secretary for EM or the Field Managers, the EMSSAB (and the site specific boards like Oak Ridge) may provide advice and recommendations concerning the following EM site-specific issues:

- Cleanup standards and environmental restoration;
- Waste management and disposition;
- Stabilization and disposition of non-stockpile nuclear materials;
- Excess contaminated facilities;
- Future land use and long-term stewardship;
- Risk assessment and management;
- Cleanup science and technology activities.

ORSSAB was chartered under FACA in 1995 and the charter is periodically renewed. Each board is organized under its own bylaws (see next page), which must remain in compliance with FACA.

The Federal Facility Agreement

In 1992 the Federal Facility Agreement (FFA), a CERCLA-required cooperative agreement among DOE, EPA, and TDEC was initiated. The agreement promotes cooperation and participation of the three parties in cleaning up the reservation. Full text of the FFA is available at www.ucor.com/RegAgreements.html.

DOE Oak Ridge is responsible for ensuring the provisions of the FFA are carried out. EPA and TDEC (the regulators) make sure DOE carries out its responsibilities. The main point of the agreement is to ensure that past and present environmental impacts to the ORR are investigated and appropriate remedial actions are taken to protect individuals and the environment. The FFA also establishes a framework and schedule for developing, implementing, and monitoring response actions.

The FFA has a number of appendices. The two you will hear referenced often are Appendices E and J. Appendix E is the list of all milestones that DOE, EPA, and TDEC have agreed to be reached during the current fiscal year and the next two fiscal years. These milestones could be the submission of required documentation or the initiation of field work. The milestones in Appendix E are enforceable; DOE must reach those milestones or risk being penalized by the regulators. Appendix J is a list of planning targets the FFA parties have agreed to for years beyond those stated in Appendix E. These targets are not enforceable and can be modified as conditions change. When the current fiscal year ends (September 30), the milestone targets in the next fiscal year in Appendix J roll into Appendix E on October 1 and then those milestones become enforceable.

Making cleanup decisions is a constant negotiation process among the FFA parties that is based on funding, budget targets, risk, technical challenges, availability of resources, and many other factors, including board recommendations. ORSSAB is kept well-informed of work planned or being done by DOE. Each year ORSSAB develops a work plan to get more information about projects on the reservation. The board can use that information to develop recommendations to DOE.

End Use Working Group (EUWG)

In 1996 DOE asked ORSSAB to initiate a process to gain a better understanding of what the community wanted regarding future use of contaminated areas of the ORR. In response, ORSSAB formed the End Use Working Group (EUWG) in 1997, which was composed initially of about 100 citizens concerned with the need to clean up the site. About 20 community volunteers finished the work 16 months later.
They were tasked with:

The End Use Working Group was charged with developing recommendations for final uses of the ORR and determining community values that would be used to guide DOE's remedial action decision-making process. The group's final report was published in 1998.

- Making recommendations for end (final) uses of contaminated areas of the ORR
- Determining community values that would be used to guide DOE's remedial action decision-making process

The recommendations of the EUWG were to identify preferences for the future of contaminated areas following remediation. These preferences were developed to guide the decision-making process with end-use goals for remediation but with no intent to identify specific remediation levels or technology or to contradict existing laws or regulations.

The EUWG developed a number of community guidelines for contaminated land and water for DOE to use in making future use decisions. Fourteen guidelines for contaminated land and five for contaminated water were written. The land guidelines were ranked in order of importance, while the water guidelines were of equal importance.

In addition to the guidelines for DOE to follow in making end-use decisions, the EUWG wrote several specific recommendations to DOE. A more detailed look of the EUWG's work is available in the report.

Stewardship

The EUWG recognized that if DOE implemented its recommendations significant amounts and levels of radioactive and chemical contaminants would have to be managed in place or moved to a different disposal facility. Transportation off the reservation to another facility was deemed too expensive, potentially risky, and politically difficult because few places want to receive radioactive mixed waste. Because the decisions that this group was supporting would result in contamination remaining on the reservation, the EUWG could not endorse any remediation program without assurance of long-term care for waste remediated in place. As a result, the EUWG formed a Stewardship Committee to develop detailed stewardship recommendations, which produced two reports on stewardship.

Stakeholder Report on Stewardship

In July 1998, the Stewardship Committee produced the first of two reports on stewardship – the Stakeholder Report on Stewardship. The report described the need for a stewardship program and the basic elements it should have.

Stakeholder Report on Stewardship, Volume 2

In 1999 the Stewardship Working Group, which was the result of a recommendation made in the first Stakeholder Report, published a second volume on stewardship.

The work of the Stewardship Working Group in the second Stakeholder's report was based on the earlier work, but the basic elements and unresolved issues in the first report were more fully developed in the second report. Unresolved issues included more explicit treatment of stewardship in CERCLA documents, five-year reviews, and the role of the community with regard to oversight of stewardship.

Basically, the second report went into more detail in the execution of stewardship activities and the roles of the stewards and the public.

Each of the above documents may be viewed at the DOE Information Center or requested digitally. Detailed summaries begin on the next page.

Environmental Management Site-Specific Advisory Board
U.S. Department of Energy

Advisory Board Charter

1. **Committee's Official Designation.** Environmental Management Site-Specific Advisory Board.

2. **Authority.** The Environmental Management Site-Specific Advisory Board (EM SSAB), hereafter, the "Board," is established under the authority of the U.S. Department of Energy (DOE). The Board is being renewed in accordance with the provisions of the Federal Advisory Committee Act, as amended, 5 United States Code Chapter 10.

3. **Objectives and Scope of Activities.** The EM SSAB is made up of local site chapters (also known as "local boards") at Office of Environmental Management (EM) sites throughout the country that operate under this charter and provide the Assistant Secretary for EM, or the appropriate DOE EM official, with advice and recommendations from a community perspective concerning issues affecting the EM program. At the request of the Assistant Secretary or Field Managers, the Board may provide community-based advice and recommendations concerning any EM program activities, such as clean-up activities and environmental restoration; waste management and disposition; excess facilities; future land use and long-term stewardship; communications; and budget priorities.

4. **Description of Duties.** The duties of the Board are solely advisory in nature.

5. **Official(s) to Whom the Committee Reports.** The Board reports to the Assistant Secretary for EM and any other DOE EM official the Assistant Secretary shall designate.

6. **Agency Responsible for Providing Necessary Support for this Committee.** DOE. Within the Department, primary support and reporting requirements shall be furnished by EM.

7. **Estimated Annual Operating Costs in Dollars and Staff Years.** The estimated annual operating cost associated with supporting the EM SSAB and its subsequent local site chapters is approximately $2.9 million (M). This includes:
   a. Four full-time equivalent Federal personnel at an annual estimated cost of $563,000 and approximately $2.27M in other Federal internal costs, which include Federal travel, meeting and administrative expenses, and contractor costs;
   b. $0 in proposed payments to approximately 160 members; and
   c. Approximately $89,000 in reimbursable costs, including member travel.

8. **Estimated Number and Frequency of Meetings.** Local board meeting schedules vary by site. Depending on the needs of the Department, DOE may convene the local boards on a monthly basis, or less frequently. Additionally, members representing

each local board typically attend biannual EM SSAB Chairs meetings to discuss complex-wide EM issues.

9. **Duration.** Continuing in nature.

10. **Termination.** The Board terminates two years from the Charter filing date and may not meet if the Charter is not renewed biennially.

11. **Membership and Designation.** Pursuant to delegated authority by the Secretary of Energy, the Assistant Secretary for EM is authorized to appoint and remove EM SSAB members.

    a. Approximate number of members: 160
    b. The standard term for Board members is two years. Board members may be reappointed to additional terms following review but may serve no more than a total of six years.
    c. Field Managers may request a term-limit exception only after a thorough effort to recruit new members has been conducted and no viable candidates are identified.
    d. The majority of members shall live or work in counties near EM Program activities and are appointed as community representative members. Expertise is not required for Board membership.
    e. Members may include the contractor/union workforce but cannot receive compensation from their employer/union for participation on the Board.
    f. Recruitment and appointment of Board members shall be accomplished using procedures designed to achieve a balance of community viewpoints.
    g. The Assistant Secretary or DOE Field Managers for EM activities may invite other Federal, State, local or Tribal governments to name liaisons to the local boards to provide information and represent their agency's interests in Board-related activities. Liaisons may participate in discussions but shall have no voting privileges, shall not hold Board leadership positions, and shall not be included in the quorum count.
    h. Board members serve without compensation; however, each member may be reimbursed in accordance with the Federal Travel Regulations for authorized travel and per diem expenses incurred in service to the Board.

12. **Subcommittees.** DOE has the authority to form subcommittees. Subcommittees may be formed for each local site chapter of the EM SSAB with the approval of the Designated Federal Officer (DFO). The objective of subcommittees is to draft advice or recommendations for the Board's consideration within the scope of the Board. Such subcommittees or work groups may not work independently and must report their draft advice and recommendations to the Board for deliberation and discussion. Subcommittees have no authority to make decisions on behalf of the Board or local boards, nor can they report directly to DOE. At the discretion of the DFO, members of the public can participate in subcommittees but cannot serve leadership roles.

13. Filing Date.

Date filed with Congress: March 31, 2026

David Borak

David Borak
Committee Management Officer

Oak Ridge Site Specific Advisory Board

BYLAWS

Contents

I. MISSION

The mission of the Oak Ridge Site Specific Advisory Board (ORSSAB) is to provide informed advice and recommendations concerning site specific issues related to the Department of Energy's (DOE's) Environmental Management (EM) Program at the Oak Ridge Reservation. In order to provide unbiased evaluation and recommendations on the cleanup efforts related to the Oak Ridge site, the ORSSAB seeks opportunities for input through collaborative dialogue with the communities surrounding the Oak Ridge Reservation, governmental regulators, and other stakeholders.

The EM Site Specific Advisory Board is chartered under the Federal Advisory Committee Act (FACA), as amended, 5 U.S.C., App. 2. The ORSSAB is one of eight local boards that make up the EM SSAB. ORSSAB is thereby subject to the requirements of the EM Site Specific Advisory Board Charter, FACA and its implementing regulations (Title 41 C.F.R. Part 102-36).

II. FUNCTIONS, SCOPE, AND ACCOUNTABILITY

At the specific request of EM, the Board will provide independent advice and recommendations to the Assistant Secretary for EM, the Manager for the Oak Ridge Office of Environmental Management, or the appropriate DOE EM official.

A. Functions: The Board will provide advice and recommendations in response to charges issued by EM or the Site Manager.

B. Scope: The scope of the advice and recommendations of the Board includes:

1. Clean-up activities and environmental restoration; waste and nuclear materials management and disposition; excess facilities; future land use and long-term stewardship.
2. The Board may also be asked to provide advice and recommendations on any EM program components, such as risk assessments, communications, and funding priorities.

C. Accountability: The Board interacts with the appropriate EM decision makers to provide advice on matters within its scope, on behalf of the citizens of Oak Ridge and the surrounding communities.

1. The Board seeks a free and open two-way exchange of information and views between Board members and EM, where all are invited to speak and to listen.
2. Board members may request access to independent technical advice, staff, and training.
3. The Board will develop specific operating procedures and undergo requisite training to ensure that all members will hear a wide range of views and use constructive methods for resolving conflict, making decisions, and dealing with the differing viewpoints.
4. The Board will always remain accountable to the public and EM, and seek to promote multicultural community involvement. The Board is committed to ensuring a diverse Board membership and a balance of representative viewpoints.
5. In compliance with the Federal Advisory Committee Act, Board meetings will be open to the public, and the Board will give advance notice of a minimum of 15 days. Board

meetings will be held at regular times in public locations to encourage maximum public and Board participation.

6. Board membership shall reflect a full diversity of viewpoints in the affected community and region, and will be composed of people who are directly affected by EM site clean-up activities.
7. The Board members will send all requests to the EM Deputy Designated Federal Officer (DDFO) to ensure a prompt response. The DDFO is responsible for tracking DOE responses to requests from the Board and ensuring the completeness of those responses.
8. The Board shall develop and publish an Oak Ridge–specific annual report of its activities for stakeholders.
9. Board members should collaborate with DOE and seek stakeholder input to develop a general work plan each year based on the Board's charge to guide the Board and its subcommittees' activities. All work plan items shall be approved by DOE headquarters prior to implementation.
10. The Board will also maintain a repository of the Oak Ridge Board documents and will comply with all FACA recordkeeping requirements.

III. MEMBERSHIP

A. Authority: Pursuant to delegated authority, the Assistant Secretary for EM is authorized to appoint and remove EM SSAB members.

B. Terms of Office: The Board shall consist of not more than 22 voting members. Two non-voting student representatives identified each year by area high schools may participate in Board activities for one year but cannot count toward the quorum. The Board membership is on a rotation schedule that will encourage new individuals to participate and will maintain a balance between continuity and diversity inherent in the makeup of the Board.

1. Terms of office will be two years.
2. Members may serve three terms for a total of six years.
3. If after significant recruitment efforts, it is found that the member pool is limited, a request for an exception from term limits may be made by the affected Field Manager to the Assistant Secretary in accordance with the EM SSAB Charter.

C. Vacancies: Membership packages requesting appointments for new two-year member terms are completed on a scheduled basis, typically one per year. When a vacancy exists due to resignation or removal of a Board member mid-appointment, the vacancy may be filled by site appointment for the remainder of the unexpired term in accordance with the DOE EM Site Specific Advisory Board Membership Balance Plan.

IV. MEMBERSHIP RESPONSIBILITIES

A. Member Commitments: Board members make the following commitments:

1. To attend regular meetings and receive training;

2. To review and comment on EM and other documents within their purview that come before the Board, and submit timely recommendations to EM;
3. To be available for subcommittee work between Board meetings, and to participate fully in the affairs of the Board;
4. To work collaboratively and respectfully with other Board members and liaisons in the best interests of both the Board and the public;
5. To represent accurately all matters before the Board;
6. To handle in a responsible manner information and materials provided by the agencies, particularly drafts developed for an agency's in-house use, that might have significant future revisions as part of the agency's working practices;
7. To share any written communication about or for Board activities with the Board as a whole and with the DDFO;
8. To act for the Board or as its representative only with the majority vote of the Board;
9. To serve on at least one subcommittee during any given twelve-month period as appointed by the Chair; and
10. To abide by the terms and conditions of the EM SSAB Charter, these bylaws and all applicable laws or other DOE polices or requirements.

B. Liaison Commitments: The Board requests that liaisons make the following commitments:

1. To provide timely access to information pertinent to EM and associated environmental issues and related decision making;
2. To inform the Board in a timely and proactive manner of agency processes, programs, projects, and activities pertinent to the Board's mission and purpose.

V. BOARD STRUCTURE

A. Chair, Vice Chair, and Secretary: The Board will elect by majority vote, a Chair, Vice Chair, and Secretary, who will ensure that a diversity of viewpoints are considered in all Board discussions. It is preferred that candidates for the office of Chair have previous experience on the Executive Subcommittee to better facilitate the function of said subcommittee. The Chair will support the Board in a balanced and unbiased manner, irrespective of any personal views on a particular issue and see that all Board members have the opportunity to express their views.

1. The election for Chair, Vice Chair, and Secretary will ideally be held before the first meeting of the fiscal year but may be held as the first item of board business at the first meeting of the fiscal year. The terms of the Chair, Vice Chair, and Secretary will be one fiscal year.
2. The Chair will serve as liaison with the Federal Coordinator, support staff, and facilitator(s), assisting in the preparation of the agendas, minutes of the meetings, and other necessary arrangements.
3. The Chair certifies to the accuracy of all minutes.

4. The Chair signs the certification of a recommendation that the Board has passed by consensus/majority. If consensus/majority is not reached, the Chair may refer the matter back to the applicable subcommittee, as applicable, or sign and send to DOE the majority and minority reports.
5. The Chair assures necessary administrative support for any subcommittees and requests DOE support through the DDFO.
6. The Chair shall recommend appointment of members of subcommittees to the DDFO and ensure that the membership of any subcommittees reflects the diversity of the Board to the extent practicable.
7. The Chair serves between regular meetings of the Board as contact for EM, interest groups, and the public.
8. The Vice Chair serves as Chair in the absence or incapacity of the Chair.
9. The Secretary shall:
    a. Assume the duties of the Vice Chair in his/her absence;
    b. Work with administrative staff to give due notice to DOE, Board members, and the public of all Board and subcommittee meetings;
    c. Keep full and accurate records of the proceedings of the Board and subcommittee meetings (including attendance), with assistance from administrative staff;
    d. Notify the Executive Subcommittee of any member with two consecutive absences from regularly scheduled Board meetings;
    e. Review minutes of Board meetings with the administrative staff for timely distribution to Board members; and
    f. Work with the DOE Federal Coordinator, administrative staff, and any designated subcommittee to review an annual report and an annual work plan. The Board year begins October 1.
    g. Prior to any vote, provide a status of members present to verify whether a sufficient quorum exists for recommendations.
10. The Chair, Vice Chair, and Secretary will have other duties as assigned by the Board.
11. In the absence of the Chair, Vice Chair, and Secretary, the immediate past Chair, if that person still serves on the Board, shall serve as Chair of the Board meeting. In the absence of the immediate past Chair, the immediate past Vice Chair, if that person still serves on the Board, shall serve as Chair of the Board meeting. If none of these persons is present, those Board members present shall select, with the approval of the DDFO, a Chair for the meeting.
12. No officer of the Board shall serve more than two consecutive years in the same office.

B. Subcommittees: Subcommittees may be formed with the approval of the DFO or DDFO. The Board will establish any needed subcommittees prior to the beginning of each fiscal year to reflect the Board's approved work plan for that year. The Board may establish ad hoc committees as it deems necessary.

C. Structures of Subcommittees and/or Ad-hoc Committees:

1. Membership on subcommittees will be on a volunteer basis, and Board members must serve on at least one subcommittee.
2. Members may develop additional operating procedures consistent with the bylaws.
3. Subcommittees may not directly submit recommendations to EM. They are solely responsible for producing draft proposals or information for the full Board. Before presenting a recommendation to the Board, the subcommittee should have passed the recommendation by majority vote of the members attending the meeting.
4. The subcommittees will meet independently of the Board. If the meetings of the subcommittee are open to the public, they must hold them in public locations after appropriate notice.
5. If a written summary of the subcommittee meetings is prepared, the Chair of the subcommittee will provide it to the Board.
6. Election of the Chair for any subcommittees will occur annually, or as necessitated by vacancies. Standing subcommittees may, at their discretion, internally select, elect, appoint, or remove subcommittee Co-Chair or Vice Chair (either title bearing the same intended meaning), from among only the properly appointed Board members of the subcommittee. Co-Chairs or Vice Chairs shall serve and act in the temporary absence of the duly elected subcommittee chairperson.
7. Subcommittee Chairs shall notify the Board Chair and the DDFO of the selection, election, appointment, or removal of any standing subcommittee Co-Chair or Vice Chair.
8. Except for the Nominating and Executive subcommittees, non-Board members shall be allowed to vote in subcommittee meetings but shall not hold leadership positions.
9. Subcommittees shall be established by the Board, following approval by the DFO or DDFO, for the purpose of investigating special topics. The charge to, Board membership of, and Chair of the subcommittees shall be established by the Board and approved by the DDFO.
10. Subcommittees shall be confirmed by the Chair, upon recommendation of the Chair of the respective subcommittee. Members of the public may be allowed to participate on a non-voting basis for any subcommittee except for the Executive and the Nominating subcommittees. The DDFO shall concur in all recommendations for participation by non-Board members.

D. Executive Subcommittee: The Board has an Executive Subcommittee consisting of the Chair, Vice Chair, Secretary, and Chairs, Co-Chairs, or Vice Chairs of any standing subcommittees established during the fiscal year. It shall meet at least bimonthly and may hold other meetings at the call of the Board Chair to consider matters of importance that may require immediate resolution. The DDFO or the DDFO-designated Federal Coordinator shall serve as a non-voting member of the Executive Subcommittee.

1. During the intervals between Board meetings, decisions involving the daily business operations of the Board (e.g., setting budgets and agendas, coordinating subcommittee requirements and activities, etc.) shall be made by majority vote of the Executive

Subcommittee. However, this committee shall have no authority to set Board policy or make any recommendations to EM.

2. Actions on routine general administrative matters requiring time-critical action by the Executive Subcommittee may be handled by polling members of the Executive Subcommittee through any quick means of communication. Decisions will be validated by the Board Chair and documented in the minutes of the next regularly scheduled Board meeting.

3. The Executive Subcommittee shall have no authority to act for the Board on any motion or recommendation that affects a decision made by the full Board. Any motion or recommendation affecting a decision of the Board shall be submitted by the Executive Subcommittee to the Board for consideration at the next regularly scheduled Board meeting.

E. Work Sessions: Work sessions are defined as meetings that include at least two members of the Board, at which official action is not being taken.

F. Closed Session: Should the Board seek to close a meeting, it shall do so in compliance with 41 CFR 102-3.155 and any applicable DOE procedures.

G. Removal of Officers: An officer of the Board (Chair, Vice Chair, Secretary, or standing subcommittee Chair, Vice Chair, or Co-Chair), may be removed from their office for misconduct or neglect of duty by a vote of the Board upon the recommendation of the Executive Subcommittee, the recommendation of the DDFO, or a duly authorized motion tendered by a Board member at a regularly scheduled Board meeting.

H. Replacement of Officers:

1. A Board office vacancy (Chair, Vice Chair, or Secretary) that comes into existence will be announced at a regularly scheduled Board meeting.

2. An election by the entire Board will be held at the next regularly scheduled Board meeting after the meeting at which the vacancy was announced. In the event of a removed, resigned, or abandoned vacancy in the Chair, Vice Chair, or Secretary, the term of office of any interim replacement election for the Chair, Vice Chair, or Secretary shall expire on September 30th and the regularly scheduled annual election shall be held as provided in Article V, Section A, Number 1.

3. If both the Chair and Vice Chair become vacant at or near the same time, then the Board shall, at the meeting at which the vacancy is announced, elect by majority vote a Chair and Vice Chair to serve the Board until, and at, the next regularly scheduled Board meeting. To prevent delay in Board work, and in the absence of a timely interim election, the Executive Subcommittee shall appoint, subject to DDFO approval, an Acting Chair and Vice Chair (if needed or desired), from among the voting members of the Executive Subcommittee, to serve the Board until the next regularly scheduled Board meeting.

VI. DECISION MAKING

All Board decisions relating to recommendations and advice to DOE shall be reached through parliamentary procedure. The Board shall strive for substantial agreement among Board members for approval of recommendations and advice to DOE.

A. Quorum for Meetings: For the purpose of conducting business, a quorum shall be a majority (i.e. one more than one half) of the authorized membership of the Board, excluding liaison members.

B. Approval of Recommendations: Recommendations shall be approved by majority vote of the appointed Board membership.

C. Proxy Voting: Voting by proxy on any Board or subcommittee action is prohibited.

D. Bylaws Amendments: These Bylaws may be amended at any regular meeting of the Board by a majority vote of the entire Board membership, provided that the proposed amendment was submitted in writing and read at a previous regular business meeting. (Also see Section XII.)

E. Removal of Officers: An officer of the Board may be deposed from office for misconduct or neglect of duty in office by a two-thirds vote of the Board.

F. Requirements for Recommendations to EM:

1. Standing subcommittees, the Executive Subcommittee, or individual members may propose recommendations to the Board.
2. Proposed recommendations must be in writing.
3. Proposed recommendations will be included in Board packets or be made available to members prior to the Board meeting, along with supporting background documentation.
4. Proposed recommendations will be discussed at Board meetings and will be approved, rejected, or returned to subcommittees for further work (e.g., editing, refinement, and incorporation of public and/or members' comments).
5. Proposed recommendations will be introduced as motions for Board approval.
6. When an issue comes before the Board, the Chair may refer the issue to the appropriate standing subcommittee or create a subcommittee for that issue. The subcommittee will report progress to the Board at the next meeting.
7. Board members who disagree with an approved recommendation should document it in writing.
8. When it appears that the Board has reached agreement on a particular recommendation, the Chair may call for a vote.
9. Recommendations dealing with complicated and/or controversial issues may require more than one draft and may take multiple meetings to evolve into a form that is acceptable by a majority of the Board.

G. Administrative Decision Making:

1. Administrative functions of the Board may be delegated to the Chair who may assign actions to the Federal Coordinator and/or his/her staff.
2. If the Board finds need to review or affirm specific decisions made under the authority delegated to the Chair, such affirmation will be expressed by a majority vote of the Board at the next meeting.

H. Procedures and Parliamentary Law: The current edition of "Robert's Rules of Order" shall apply on all questions of procedures and parliamentary law not specified in these bylaws.

VII. ROLE OF THE FACILITATOR

A professional facilitator may be hired to help the Board organize its work, prepare an agenda based on consultations with the Board and the Chair, facilitate the Board meetings, and work with the staff to prepare the minutes of the meetings.

VIII. CONDUCT AND FORMAT OF MEETINGS

A. Meeting Format:

1. Public notices will be printed in the Federal Register at least fifteen (15) days before the meeting. Additional announcements may be made via other outlets, such as on the radio and in local newspapers.
2. The Board will meet as needed, with the length of meetings determined by the agenda.
3. The Board will submit its agenda for the approval of the DDFO. In preparing the agenda, the Board reviews its work plan and, if appropriate, obtains additional input from its members and subcommittees and the public.
4. Meetings will be open to the public; a section of the meeting room will be set aside for observers; and public comment is invited at appropriate times during a meeting.
   - **a.** At least 15 minutes will be included in the agenda for public comment, unless questions are taken throughout the meeting. A non-recused Board member may not address the Board during the time set aside for public comment. The public comment period may be extended by the Chair or by consensus of the Board members in attendance.
   - **b.** If required, at the discretion of the Chair, the fixed time will be divided equally among the members of the public who request to speak.
   - **c.** In addition to formal public comment and before a decision on a recommendation is made, the Chair may invite members of the public to offer their input. The Board will determine in advance how much time they will allocate for this additional public input.
   - **d.** Members of the public may offer their comments in writing and give them to the DDFO to be read into the meeting record.
   - **e.** Time will be set aside for Board member comments during each meeting.

5. Any meeting will be set up in terms of both the physical arrangements and the agenda to facilitate hearing and discussion.
6. Minutes of the meetings will be kept by an individual designated by the Chair, distributed to the Board members for their review and made available to the public. Each meeting agenda will include the opportunity for members to make revisions to the minutes of the previous meetings.

   The Chair or Vice Chair must approve the minutes within 90 calendar days of the meeting to which they relate. In the absence of the Chair or Vice Chair the DDFO must make such certification.
7. Any product of the Board, such as policies, positions, reports, advice or recommendations given to DOE, must be reviewed by the Board in final distribution form before distribution and being placed in the DOE public reading rooms and any other places deemed appropriate.

B. Conduct of Meetings:

1. The Board may utilize a neutral third-party facilitator to assist it in accomplishing its mission. In all instances the facilitator will operate in a completely neutral, balanced, and fair manner.
2. Board members will show respect to each other, EM, liaisons, and the public.

IX. BUDGET

1. **Authority**. DOE EM retains the fiscal responsibility for the Board. If requested by the DDFO, the Board can provide input regarding funding for the Board.
2. **Compensation:** Board members will serve without compensation but may receive reimbursement for direct expenses related to the work of the Board and meeting attendance.
3. **Travel Expenses:** Board and subcommittee members are required to follow applicable federal travel regulations. All travel expenses must be submitted to the Federal Coordinator for reimbursement according to Federal guidelines. Trip reports by Board members must be prepared within 30 days and submitted to the support staff for inclusion in the Board's records.

X. CONFLICT OF INTEREST

Definition: Board members appointed as special Government employees (SGEs) are subject to the Federal statutes and regulations regarding conflicts of interest, including not participating personally and substantially, in any particular matter, before the Board, in which, a financial interest is held by the member, or the member's spouse, minor child, general partner, or organization in which the member is serving as officer, director, trustee, general partner, or employee, or any person or organization with whom the member is negotiating or has any arrangement concerning prospective employment. Board members appointed as representative members, as a matter of DOE policy, should agree to be recused from participating in any

meeting, study, recommendation, or other Board matter or activity that would have a direct and predictable effect on the companies, organizations, agencies, or other entities with whom the representative member, or the representative's family member, are personally associated, or in which a financial interest is held.

A. Enforcement of Conflict of Interest Policy: Questions concerning conflict of interest shall be referred to the DDFO and/or the Federal Coordinator, who will seek the advice of DOE's Office of General Counsel for resolution.

B. Recusal: If a Board member is aware of a conflict of interest, as defined above, the member shall immediately inform the DDFO and the Board of the interest and shall refrain from participating in discussions and recommendations in which a conflict or potential for conflict of interest exists.

C. Principles of Conduct: Board members shall abide by the following conflict of interest principles:

1. Members shall refrain from any use of their membership, which is or gives the appearance of being motivated, by the desire for private gain.
2. Members shall not use, either directly or indirectly for private gain, any inside information obtained as a result of Board or subcommittee service.
3. Members shall not use their positions in any way to coerce, or give the appearance of coercing, another person to provide a financial benefit to the member or any person with whom the member has family, business, or financial ties.
4. Members who are appointed as SGEs must follow the prohibitions on accepting gifts contained in 5 CFR 2635.201 et seq. and should seek the advice of the Office of General Counsel, as applicable.

XI. AMENDING THE BYLAWS

A. Policy: The Board shall have the power to alter, amend, and repeal these bylaws in ways consistent with the Charter of the EM Site Specific Advisory Board, and any other applicable laws, regulations, and guidelines. Any member of the public, the Board, or one of the Agencies may propose an amendment. However, to be considered by this Board the proposed amendment must be sponsored by a Board member. The bylaws may be amended at any regular meeting of the Board by a majority vote of the entire Board membership, provided that the proposed amendment was submitted in writing and read at a previous regular business meeting.

B. Approval: All amendments to these bylaws must be approved by the Designated Federal Officer in consultation with the Office of General Counsel.

XII. ADOPTION OF THE BYLAWS

A. These bylaws will be effective:

1. Upon the affirmative vote of the Board membership,
2. Execution by the Chair,

3. Review and approval by the DOE Office of the General Counsel, and
4. Approval of the EM SSAB Designated Federal Officer.

B. All previous bylaws or procedures are hereby rescinded.

XIII. SEVERABILITY OF THE BYLAWS

In the event that any provision of these bylaws is invalid, such invalidity shall not affect the remaining provisions that shall continue in full force and effect to the extent practicable.

APPROVED: November 14, 2007

REVISED: April 10, 2019

REVISED: June 9, 2021

REVISED: May 13, 2022

Summaries of the Final Report of the End Use Working Group and the Stakeholder Reports on Stewardship

Summaries of the Final Report of the End Use Working Group and the Stakeholder Reports on Stewardship

In 1989 the Oak Ridge Reservation (ORR), which includes the main plants of the Oak Ridge National Laboratory (ORNL), the Y-12 National Security Complex, and East Tennessee Technology Park (formerly the K-25 Gaseous Diffusion Plant), was placed on the Environmental Protection Agency's National Priorities List for cleanup (also known as Superfund).

In 1995, the Department of Energy established the Oak Ridge Site Specific Advisory Board (ORSSAB) to serve as the citizens' advisory group to the department on its Oak Ridge Environmental Management Program to clean up the reservation of legacy radioactive and hazardous waste left over from operations at Y-12, ORNL, and K-25.

In 1996 DOE asked ORSSAB to initiate a process to gain a better understanding of what the community wanted regarding future use of contaminated areas of the ORR. To address the department's request the board in 1997 formed the End Use Working Group (EUWG), which was composed of about 20 community volunteers and tasked with developing:

- Recommendations for end uses of contaminated areas of the ORR
- Determining community values that would be used to guide DOE's remedial action decision-making process

EUWG deliberations determined that additional issues needed to be evaluated, including:

- The relationship of the use of contaminated groundwater and surface water to recommended end uses of contaminated areas
- The need for a long-term stewardship program when an end use recommendation resulted in residual contamination
- The need for an on-site waste disposal facility

The recommendations of the EUWG were to identify preferences for the future of contaminated areas after remediation. They were developed to guide the decision making process of remediation but with no intent to identify specific remediation levels or technology or to contradict existing laws or regulations.

EUWG developed a number of community guidelines for contaminated land and water for DOE to use in making future use decisions. Fourteen guidelines for contaminated land and five for contaminated water were written. The land guidelines were ranked in order of importance, while the water guidelines were of equal importance.

The primary guidelines for contaminated land included:

- Property owners/operators must comply with all laws and regulations to ensure safe working conditions and to protect nearby residents and the environment
- Contamination left on site must be controlled to prevent spreading
- Trust funds should be established for long-term care (stewardship) of contaminated land
- Impacts to the environment should be minimized during remediation and the environment should be restored when remediation is complete
- Buffer zones should be put in place to protect nearby and future populations from areas with residual contamination
- End use of contaminated land should allow for future development

Guidelines for water include:

- Groundwater leaving the reservation should meet criteria for unrestricted use

- Contaminated groundwater must be controlled so that it doesn't impact uncontaminated groundwater
- Contaminated groundwater remaining after remediation must be controlled to prevent spreading
- Contaminated groundwater underneath uncontaminated land should be restored to health-based standards if possible
- Surface water on the ORR must eventually meet safe water quality standards

Recommendations from the End Use Working Group
In addition to the guidelines for DOE to follow in making end use decisions, the EUWG wrote several specific recommendations to DOE, which are summarized here.

Recommendation for Bethel Valley of ORNL
The central campus of ORNL had, and still has, a number of contaminated areas that threaten the health and safety of employees and the associated working environment.

The EUWG recommended that remediation decisions should achieve, at a minimum, a controlled industrial end use for the entire Bethel Valley area, which would allow for surface use of contaminated land.

Recommendation to Site a Waste Disposal Facility
The EUWG recognized that large volumes of waste would be generated during cleanup activities. It also recognized that it would be impractical to try to ship all waste off-site.

The EUWG recommended that a waste disposal facility be built to accept contaminated materials meeting specified waste acceptance criteria. Material not meeting the criteria would be shipped off-site.

The recommendation was to site the facility in East Bear Creek Valley, which had been used for earlier waste disposition. The Environmental Management Waste Management Facility was later built at that location.

Recommendation for the End Use of Disposal Areas in Melton Valley
Melton Valley, in the southwest portion of the ORR, had been used for many years as a disposal area of burial grounds, seepage pits, and hydrofracture sites. It was also the solid waste storage area for about 50 off-site facilities.

Because the area contains highly radioactive waste, excavation and removal was considered too risky and cost prohibitive.

The EUWG recommended that the area have restricted use, but that worker safety should be ensured and migration of contaminants controlled to prevent release of contaminants in White Oak Lake and subsequently the Clinch River. The group also recommended that DOE continue to monitor major sources of radiological risk.

Remediation of Melton Valley was completed in 2006.

Recommendation for the End Use of the Upper East Fork Poplar Creek Watershed
The Upper East Fork Poplar Creek Watershed (UEFPC) lies between Pine Ridge and Chestnut Ridge, which is also the location of the Y-12 National Security Complex. Y-12 was built in the 1940s to produce enriched uranium by means of an electromagnetic process.

Y-12's primary mission today and well into the future is dismantling of nuclear arms and storage of highly enriched uranium.

But during World War II and the ensuing Cold War years operations at Y-12 resulted in significant contamination of soil, surface water, and groundwater.

For the purpose of its recommendations, the EUWG divided Y-12 into eastern and western portions – the west end being more heavily contaminated than the east.

The EUWG recommendations for the UEFPC Watershed and Y-12 are as follows:

- The western end of Y-12 is expected to remain controlled industrial property
- The eastern end should be made suitable for uncontrolled industrial use
- Lake Reality and New Hope Pond, in the eastern portion, will require continued federal government control and use of the area should be consistent with end use of the eastern end
- Chestnut Ridge should be used for regulated waste disposal for the ORR
- UEFPC must eventually meet State water quality standards. In the interim, water quality must not pose an unacceptable risk to Y-12 workers or residents or businesses near the creek or its tributaries
- Contaminated groundwater from Y-12 must not be allowed to contaminate uncontaminated groundwater

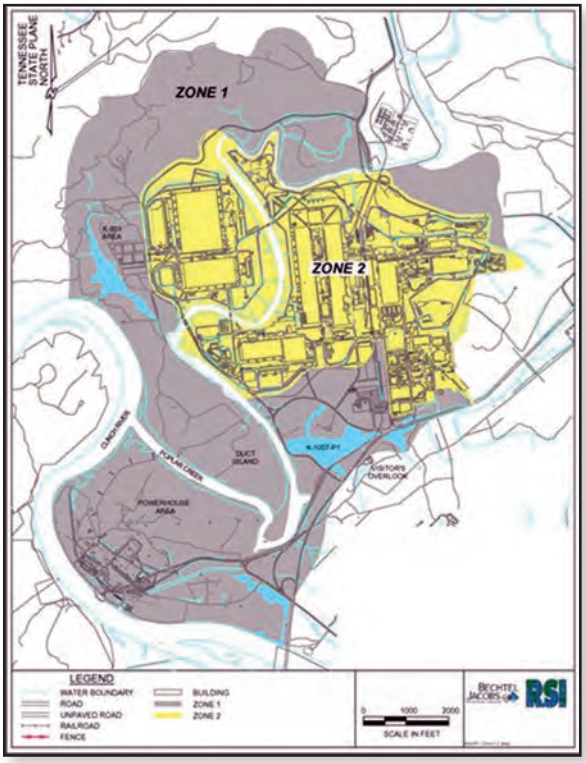
Recommendation for the End Use of the Former K-25 Site at East Tennessee Technology Park (ETTP)

The K-25 Site was one of the three major plants built on the ORR during World War II. It is the reservation's western most facility on the Clinch River.

From 1945 to 1964 the site produced weapons-grade uranium. From 1965 to 1985 the site produced commercial-grade uranium. Of the 4,600 acres that lie in the administrative watershed of ETTP, about 1,000 acres have been impacted by operations at the site.

In addition to five large uranium processing buildings, the site also contained many support buildings, labs, maintenance shops, and so on.

Most of the demolition work of old facilities on the ORR has and is taking place at ETTP. Almost all of the original buildings will be torn down eventually. The site also has a number of contaminated areas.



Map of ETTP showing Zones 1 and 2.

For administrative purposes ETTP was divided into three zones. Zone 2 is the central industrial and administrative area. Zone 1 borders Zone 2 from the south to the northwest and borders the Clinch River. It is not as developed as Zone 2. Zone 3 is a former support area on the northeast quadrant of the site.

The EUWG made the following recommendations regarding the end use of ETTP:

- Zone 1 should be remediated to allow for uncontrolled industrial end use, with a focus on natural resource conservation
- Zone 2 should be remediated to provide for uncontrolled industrial end use
- Zone 3 should be remediated to provide for controlled industrial end use. If the existing K-1070-B and K-1070 C/D waste disposal areas in Zone 3 cannot be fully remediated to controlled industrial use, then

these areas should be maintained as restricted access waste disposal properties and should be managed to ensure the safety of surrounding populations and the environment.
- The continued storage of UF_6 (uranium hexafluoride) is not compatible with these recommended end uses. The incompatibility should be resolved on a schedule that coincides with the planned remediation of the site (UF_6 cylinders have been removed from the site).

STEWARDSHIP

The EUWG recognized that if DOE implemented its recommendations some radioactive and chemical contaminants would have to be managed in place or moved to a different disposal facility. Transportation off the reservation to another facility was deemed too expensive, potentially risky, and politically difficult because few places want to receive waste. Because most contamination would remain on the reservation the EUWG could not endorse any remediation program without assurance of long-term care.

As a result the EUWG formed a Stewardship Committee to develop detailed stewardship recommendations, which produced two reports on stewardship.

Summaries of those reports follow.

Stakeholder Reports on Stewardship Summarized
In July 1998, the Stewardship Committee, recommended by the End Use Working Group, produced the first of two reports on stewardship – Stakeholder Report on Stewardship. The report describes the need for a stewardship program and the basic elements it should have.

What is Stewardship?
The committee defined stewardship as "Acceptance of the responsibility and the implementation of activities necessary to maintain long-term protection of human health and the environment from hazards posed by residual radioactive and chemically hazardous materials."

The report outlined a number of attributes for attaining a successful stewardship program.

Attributes of Successful Stewardship
- Stewardship planning must be done concurrently with remediation.
- Stewardship of contaminated sites requires that society accept responsibility for providing a healthy and safe environment for current and future generations. The federal government must provide funding for long-term stewardship. All stakeholders must work together to develop and implement a stewardship program.
- Stewardship programs must be designed to protect human health and the environment for the life of the contaminants.
- Stewardship programs must be adaptable to changing physical and technological conditions and political demands to provide ongoing protection.

Elements of stewardship
- Authority and funding
- Stewards
- Operations
- Physical controls
- Institutional controls
- Information systems
- Research

Authority and funding

Long-term stewardship is impossible without concurrent financial support. At federal facilities authority begins with Congress and is delegated to an appropriate federal entity.

Stewards

Groups or individuals responsible for stewardship activities.

- Principal steward has legal responsibility for contaminated land and facilities including financial obligation and to take corrective action if the stewardship program becomes ineffective. In Oak Ridge the principal stewardship is the Department of Energy.

- Implementation steward is responsible for monitoring, maintenance, and record keeping. In Oak Ridge implementation stewards are DOE and contractors.

- Oversight stewards ensure that goals and requirements of a stewardship program are met. In Oak Ridge the oversight stewards are the Tennessee Department of Environment and Conservation, the Environmental Protection Agency, and interested stakeholders (the public).

Operations

The success of stewardship is dependent upon the numerous activities that must be conducted to ensure remediation remains effective and systems are working as expected.

- Monitoring – regular sampling to make sure controls are working and to provide continuous information about the nature and extent of contamination.
- Maintenance – regular upkeep of remediation systems.
- Surveillance – regular oversight of remediation and institutional systems to ensure that all necessary activities occur.
- Enforcement – legal restraints to maintain human health and the environment.
- Inspection and reevaluation – periodic review of existing systems and activities to ensure continued need and effectiveness.
- Public participation – continuous involvement of the public to ensure concerns are addressed and relevant public information is provided.

Physical Controls

Physical controls are barriers to limit public access to contaminated areas or areas where contamination has been remediated in place. These could include natural barriers such as trees or surface water or engineered barriers like fences and warning signs.

Institutional Controls

Institutional controls are legally binding provisions to control future uses of land or resources by limiting development or restricting public access with residual contamination. They can be divided into governmental controls and proprietary controls.

- Government controls use the power of national, state, or local governments to impose restrictions.
- Proprietary controls allow property owners to control the use of or limit access to their properties.

Stewardship Information

Stewardship information provides present and future stakeholders with records of locations, amounts, and characteristics of contaminants. Information must be kept current. Data from surveillance and monitoring activities must be readily available.

Research
When remediation activities are completed significant data gaps and uncertainties will remain about hazards. Over time new data may provide better assessments of contamination, risks, appropriate remedial technologies, management of wastes, and so on.

Stewardship and CERCLA
The principal federal law governing hazardous waste cleanup is the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA, also known as Superfund). The Environmental Protection Agency evaluates federal facilities for inclusion on the National Priorities List for cleanup.

Under CERCLA a record of decision (ROD) documents a cleanup method for any given area. A number of pre-ROD documents are prepared leading to a cleanup decision including a remedial investigation/feasibility study and a proposed plan. The ROD decision is taken from the proposed plan. The public can provide input on the proposed plan.

The Stakeholder's Report on Stewardship said that stewardship planning must be part of the CERCLA process whenever a remedy for cleanup calls for leaving radioactive or chemically hazardous materials on the ORR. The report states that 'long-term stewardship issues and requirements should be addressed at each phase of the process to ensure effective integration of stewardship into decision making.' Specifically the report said stewardship requirements should be included in the feasibility study, the proposed plan, and the ROD, and also included in post-ROD documents - the remedial design work plan, the remedial action work plan, and the remedial action report that documents exactly what actions were taken when the project is finished.

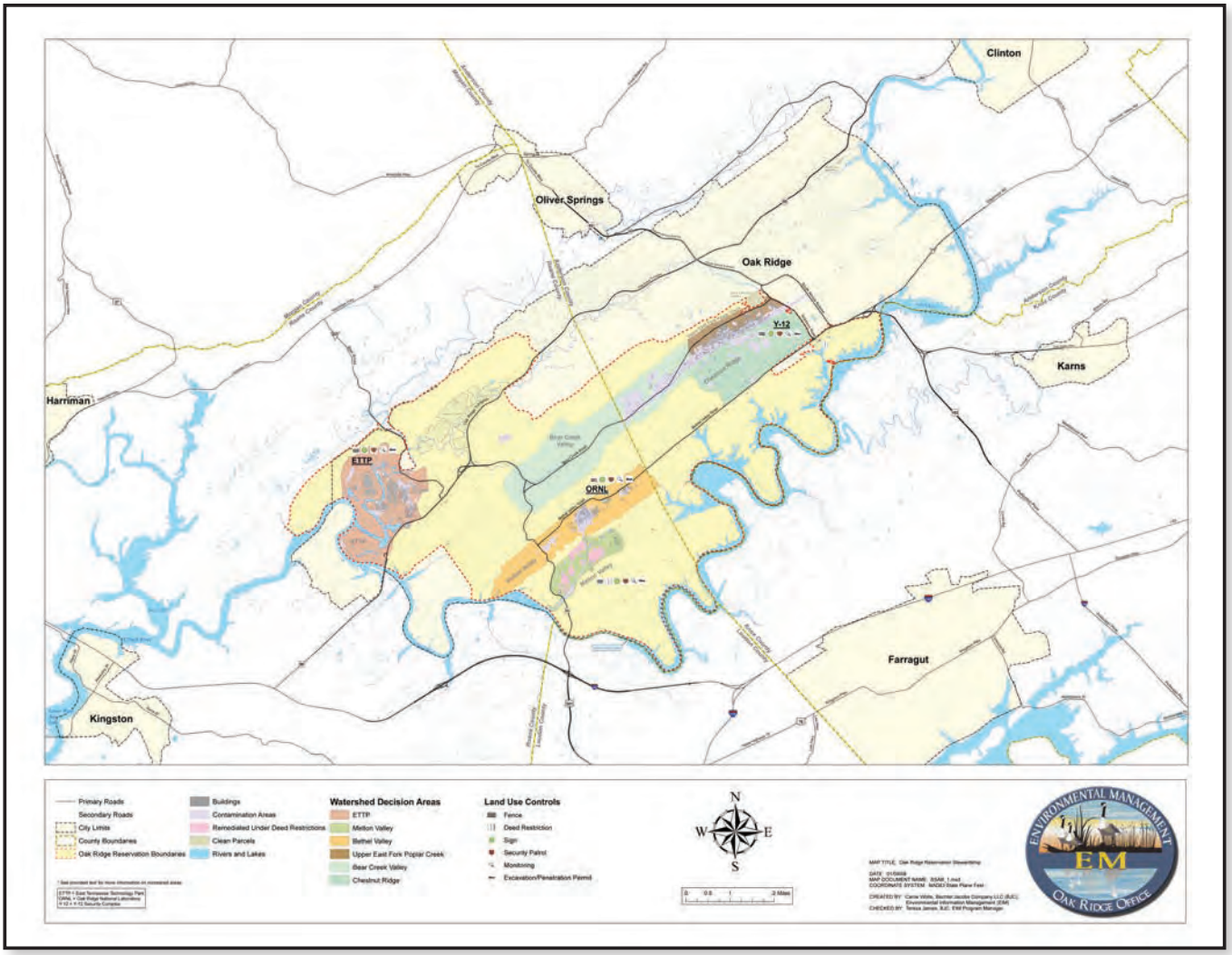
The Problem on the Oak Ridge Reservation
While the ORR is about 35,000 acres only 10 percent contains old waste disposal sites. Contaminants of concern in these areas include uranium- 235 and 238, strontium-90, cesium-137, technetium-99, mercury, tricholorethene, trichloroethane, volatile organic compounds, polychlorinated biphenyls, and others. Half-lives of radioactive elements range from 12 years to basically forever.

Abundant rainfall in the area and high water tables contribute to leaching of contaminants from waste areas into surrounding soil, surface water, and groundwater. Migration of contaminants in groundwater is especially difficult to track.

The reservation has been divided into large tracts of land that are equivalent to the major watersheds in the area. One or several RODs for each watershed will be produced instead of developing many documents for individual cleanup sites.

The major watershed decision areas are:
- East Tennessee Technology Park
- Melton Valley
- Bethel Valley
- Upper East Fork Poplar Creek
- Bear Creek Valley
- Chestnut Ridge

Within each of these watersheds are remediated areas that have stewardship requirements in place or that will be remediated eventually and will require long-term stewardship. See the Stewardship Map for a depiction of the various watersheds and related physical and institutional controls that are currently in place.



Stewardship map

Stakeholder Report on Stewardship, Volume 2

In 1999 the Stewardship Working Group, which was the result of a recommendation made in the first Stakeholder Report, published a second volume on Stewardship.

The work of the Stewardship Working Group in the second Stakeholder's report was based on the earlier work, but the basic elements and unresolved issues in the first report were more fully developed in the second report. Unresolved issues included more explicit treatment of stewardship in CERCLA documents and five year reviews and the role of the community with regard to oversight of stewardship.

Basically the second report went into more detail in the execution of stewardship activities and the roles of the stewards and the public.

OAK RIDGE OFFICE OF ENVIRONMENTAL MANAGEMENT (OREM)

Theodore E. Olds, Manager Date

THEODORE (ERIK) OLDS, MANAGER
TERESA ROBBINS, DEPUTY MANAGER
ERIN SUTTON, ACTING CHIEF OF STAFF
EXECUTIVE OFFICER
CHIEF ENGINEER
ROBERT MEEKS, RESOURCES MANAGER
STEPHEN CLUTTER, HQ SITE LIAISON
JESSICA MILLER, EMPLOYEE CONCERNS

EM-91
Procurement and Contracts Division
Karen Shears, Director

Scott Boyd
Talia Burchfield
Carol Jennings
Jessica Speed
(2) Contracting Officers

Technical Support Contractors: 5

Portfolio Federal Project Directors
Steve Clemons , Acting ORNL
Morgan Carden, Acting Y-12
Mark McIntosh, Acting ETTP

EM-92
Planning and Execution Division
Karen Thompson, Director

EM-921
Project Management Branch Chief

Michael Griswold
Laura Hedrick
Dennis Mayton
Alexandra Schenk
Michael Vestal
Physical Scientist
General Engineer

Technical Support Contractors: 8

EM-922
Planning and Baseline Management
Noemí (Cari) Méndez- Sánchez
Branch Chief

Steve Cooke
James Kidd
Rocky Stafford
Mgmt. Program Analyst
(3) Program Analysts
Program Support Asst.
General Engineer

Technical Support Contractors: 8

EM-93
Operations Management Division
Larry Perkins, Director

EM-931
Facilities Oversight
Ryan Hilmes,
Acting Branch Chief

Kara Bush
Jennifer David
Jorge González
Kiento Lanter
Timothy Noe (On-Detail)
Billy Staggs
Melanie Underwood
Bryan Westich
(3) General Engineers
(2) Physical Scientist

Technical Support Contractors: 7

EM-932
Safety, Security, and Waste Management
Amanda Kereakoglow,
Branch Chief

Hunter Brown
Robert Hensley**
Emese Krivan
Kevin Levy
Henry Mutka
Richard Neal
Johnafred Thomas
Michael Voce
Safety & Occ. Health. Mgr.
IT Specialist
Security Specialist

Technical Support Contractors: 12

EM-933
Engineering
James Daffron,
Acting Branch Chief

Franklin Brooks
(4) General Engineers

Technical Support Contractors: 6

EM-94
Quality and Mission Support Division
Joanna Hardin, Acting Director

EM-941
Quality Assurance
Ana Rosado-González
Branch Chief

Antonio Ferré
Michael Rigas
General Engineer
Physical Scientist

Technical Support Contractors: 5

EM-942
Program Support
Melyssa Noe,
Branch Chief

Leah Alexander
Alicia Harris
Sierra Hellemans#
Abby Newberry Hill
Roger Petrie
Ellen Reed
Sam Scheffler
Somer Stephens
Ben Williams
Physical Scientist
General Engineer

Technical Support Contractors: 14

**HQ Support
Intern/Fellow
Administrative Support Contractors: 7
Blue Vacant Positions

U.S. DEPARTMENT OF ENERGY

Environmental Management Site-Specific Advisory Board

Policies Desk Reference

April 2023

Table of Contents

ENVIRONMENTAL MANAGEMENT SITE-SPECIFIC ADVISORY BOARD

Policies Desk Reference

The purpose of this document is to provide guidance regarding the operation of the Environmental Management Site-Specific Advisory Board (EM SSAB or Board). This updated guidance supersedes the guidance document dated July 2013. This document is intended to summarize pertinent sections of the requirements of the Federal Advisory Committee Act (**FACA**) of 1972, **5 United States Code (U.S.C.) Appendix 2**; the General Services Administration (GSA) implementing regulations, **41 Code of Federal Regulations (41 CFR) Subpart 102-3**; the Department of Energy (DOE or Department) Manual entitled *Advisory Committee Management Program*, **DOE M 515.1-1;** the **EM SSAB Charter;** and the **EM SSAB Membership Balance Plan**. It is not intended to replace these documents. In addition, it provides specific direction for the EM SSAB.

REVISION HISTORY

This document was reviewed by CMO/Butler, GC/Comfort and approved by DFO/Snyder on August 18, 2022.

Revised September 29, 2022. Revision reviewed by CMO/Kennerly, GC/Comfort and approved by DFO/Snyder.

Revised April 17, 2023. Revision reviewed by CMO/Butler, GC/Comfort and approved by DFO/Snyder.

Background and Introduction

The EM SSAB, established in May 1994, involves stakeholders directly in DOE EM cleanup decisions. While only one FACA-chartered EM SSAB exists, eight local boards under its umbrella charter have been organized at the following sites: Hanford in Washington State, Idaho, Northern New Mexico, Nevada, Oak Ridge in Tennessee, Paducah in Kentucky, Portsmouth in Ohio, and Savannah River in South Carolina. The EM SSAB charter has been renewed every two years since 1996.

In accordance with its charter, the EM SSAB provides the Assistant Secretary for Environmental Management (EM), or the appropriate DOE EM official, with advice and recommendations concerning issues affecting the EM program. At the request of the Assistant Secretary or the Field Managers, the Board may provide advice and recommendations concerning the following EM site-specific issues: clean-up activities and environmental restoration; waste and nuclear materials management and disposition; excess facilities; future land use and long-term stewardship. The Board may also be asked to provide advice and recommendations on any EM program components, such as risk assessments, communications, and funding priorities.

Throughout the EM SSAB's history, several local boards have been created and dissolved. Reasons for the boards' dissolution vary: the completion of the EM mission at the local board's respective site, the local board's fulfillment of its mission, or the diminished effectiveness of the local board. These include:

- Fernald Citizens Advisory Board (Ohio)
- Monticello Site-Specific Advisory Board (Utah)
- Pantex Citizens Advisory Board (Texas).
- Rocky Flats Citizens Advisory Board (Colorado)
- Sandia Site-Specific Advisory Board (New Mexico)

The local boards organized under the EM SSAB Charter draw upon diverse community viewpoints and demographics to provide advice and recommendations to DOE. Some local boards are associated with DOE field offices for which EM is the landlord program, while other local boards are supported by field offices that are managed either by the Office of Science (SC), the National Nuclear Security Administration (NNSA), or the Office of Nuclear Energy (NE). However, in accordance with the EM SSAB Charter, the mission and operation of any given local board is unaltered whether the landlord is EM, SC, NNSA, or NE.

The goal of the EM SSAB is to involve a diverse group of community members in EM planning and decision-making processes for the cleanup of historic nuclear testing activities. The EM SSAB is only one component of EM's public participation program and is not intended to be an exclusive means of public participation. It is the policy of DOE and EM to conduct its programs in an open and responsive manner, thereby, encouraging and providing the opportunity for public participation in its planning and decision-making processes.

Roles and Responsibilities

A. DOE Headquarters

Office of the Secretary of Energy

The Secretary of Energy, per the requirements of FACA and the CFR, will:

- Comply with FACA and the CFR. **FACA § 8; 41 CFR § 102-3.105(a)**
- Issue administrative guidelines and management controls. **FACA § 8(a); 41 CFR § 102-3.105(b)**
- Designate a Committee Management Officer (CMO). **FACA § 8(b); 41 CFR § 102-3.105(c)**
- Ensure that meetings of the full advisory board are open to the public unless a written determination for closing any meeting is provided. **41 CFR § 102-3.105(d)**
- Review, at least annually, the need to continue the advisory committee. **41 CFR § 102-3.105(e)**
- Develop procedures to assure that advice and recommendations of the advisory committee is the result of independent judgment. **41 CFR § 102-3.105(g)**
- Assure that the interests and affiliations of advisory board members conform to applicable conflict of interest statutes and regulations. **41 CFR § 102-3.105(h)**
- Designate a Designated Federal Officer (DFO) for the advisory committee. **41 CFR § 102-3.105(i)**
- Provide opportunity for reasonable public participation in advisory committee activities. **41 CFR § 102-3.105(j)**

Office of the Executive Secretariat

The Executive Secretariat, per the requirements of FACA and the CFR, will:

- Ensure compliance with FACA. **FACA § 8(b)(1); 41 CFR § 102-3.115**
- Ensure that the interests and affiliations of advisory committee members are reviewed for conformance with applicable conflict of interest statues.
- Renew or terminate the EM SSAB Charter as appropriate. Annually, review the need to continue the EM SSAB. **41 CFR § 102-3.115**
- Process *Federal Register* notices for EM SSAB meetings. **FACA § 8(b)(1), 10(a)(2); 41 CFR § 102-3.115, 102-3.150(a)**.

DOE Manual 515.1-1 requires that the Executive Secretariat:

- Act as the Department's Committee Management Officer. **Manual § I.6.c**

- Review and concur on all advisory committee packages and appraise the need for or the continuation of advisory committees. **Manual § I.6.c**
- In coordination with heads of departmental elements and the Office of General Counsel, ensure that advisory committees are fairly balanced in membership in terms of points of view represented and functions to be performed. **Manual § I.6.c**
- Review and concur on all requests for closing part or all of an advisory committee meeting. **Manual § I.6.c**
- Maintain hard copies of the following advisory committee records. **Manual § VII.2.a:**
    - Committee establishment and renewal proposals
    - *Federal Register* notices
    - Detailed minutes and transcripts (if available) of all meetings
    - Committee reports.

Office of the Assistant General Counsel for General Law

The Manual requires that the Office of the Assistant General Counsel for General Law:

- Provide legal support for EM SSAB Charter renewal, charter termination, official appointments of Board members, and policy issues. **Manual § I.6.g**

To enhance compliance with FACA, the CFR, and DOE policy, the Office of the Assistant General Counsel for General Law will:

- Review operating procedures/bylaws submitted by the local boards to be approved by the DFO.

Office of the Assistant Secretary for Environmental Management (EM-1)

EM-1, per the requirements of FACA and the CFR, will:

- Ensure compliance with FACA and the CFR
- Issue administrative guidelines and management controls
- Appoint and remove Board members per delegated authority from the Secretary (in limited cases, this authority has been delegated to the DFO/field under section III.C of this guidance).

Office of Intergovernmental and Stakeholder Programs

The Office of Intergovernmental and Stakeholder Programs, per the requirements of FACA and the CFR, will:

- Manage and maintain a library of EM SSAB documentation, including annual reports, work plans, recommendations and responses, meeting minutes, and membership information. **FACA § 10(b), 12(a)**
- Provide the organizational location for the EM SSAB Designated Federal Officer (DFO), a position that is required for management of each Federal advisory board. (See responsibilities in Section C below.) **FACA § 10 (e); 41 CFR § 102-3.120**

DOE Manual 515.1-1 requires that the agency perform certain functions in administering its chartered advisory boards. The following functions are some of the assigned tasks to the Designated Federal Officer and the office in which she/he is located:

- Prepare *Federal Register* notices for local EM SSAB public meetings. **Manual § I.6.i**
- Ensure that conflict of interest regulations are followed. **Manual § I.6.i**
- Prepare, process, and obtain approval of EM SSAB appointment/reappointment membership packages. **Manual § I.6.i**
- Prepare, process, and obtain approval of EM SSAB Charter renewal. **Manual § I.6.i**
- Maintain EM SSAB records and documentation. **Manual § I.6.i**

To enhance compliance with FACA, the CFR, and DOE policy, the Designated Federal Officer will:

- Designate Deputy Designated Federal Officers (DDFOs) to be responsible for conducting day-to-day operations of the local site chapters of the EM SSAB (also known as "local boards"). A site may have two Co-DDFOs appointed at one time.
- Inform the EM SSAB members of Departmental processes, programs, projects, and activities directly affecting the Board's mission and purpose.
- Coordinate the review of local board operating procedures/bylaws with the Office of General Counsel to ensure that they follow FACA and other regulations and requirements. The DFO is responsible for giving final approval of local procedures/bylaws and the EM SSAB Policies Desk Reference.
- Coordinate the review and finalize the EM SSAB Annual Comprehensive Report to Congress.
- As required, coordinate HQ review of presentations to be given to the local boards by DOE employees, its contractors, or other representatives.

B. <u>DOE Field Offices</u>

Although DOE headquarters (HQ), through the Assistant Secretary for EM, the CMO and the EM SSAB DFO, is responsible for the EM SSAB, DOE field offices are accountable to DOE-HQ

for local board activities and act for EM HQ at the local level for the Deputy Designated Federal Officers, issued by the EM Designated Federal Officer.

The DOE field offices, per the requirements of FACA and the CFR, will:

- Ensure required records on local board costs and membership are maintained, as each agency needs to keep records that will fully disclose the disposition of any funds at the disposal of the local board. **FACA § 12(a); 41 CFR § 102-3.175(b); Manual § VII**
- Make records available to interested members of the public. **41 CFR § 102-3.170; Manual § VII.4**
- Recommend to the DFO, a DOE official (or officials) to serve as the DDFO for the local board. **FACA § 10(e); 41 CFR § 102-3.120**
- Ensure that DOE diversity goals are met through adequate outreach and recruitment efforts for membership. Board membership should reflect a diverse cross-section of those directly affected by, interested, and qualified as appropriate to the nature and functions of the local board. **41 CFR 102-3.60 (b)(3)**
- Provide adequate resources to enable the local board to carry out its functions as described in **FACA § 12 (b); 41 CFR § 102-3.95(a); Charter § 7; Manual § I.6.h**

To enhance compliance with FACA, the CFR, and DOE policy, the DOE field offices will:

- Ensure that member appointment and reappointment packages are submitted to EM Headquarters with nominations for the Assistant Secretary's appointment. Assistant Secretary approval of new and reappointed members is required, except for member appointments to fill an unexpired term or interim appointments. (See section III.C.)
- Provide timely responses to local board recommendations. Local office should strive to provide responses within 90 days.
- Review and, if satisfactory, submit local board operating procedures/bylaws to the DFO for review and coordination with the Office of the Assistant General Counsel for General Law to ensure that they follow FACA and other regulations and requirements.
- Develop and submit draft local annual work plans to the DFO for review and coordination with senior EM HQ leadership. Once EM HQ concurrence is received, the field office will provide final approval.
- Coordinate with DOE-HQ on EM SSAB issues and processes.

C. Designated Federal Officer (DFO)/Deputy Designated Federal Officer (DDFO)/Federal Coordinator

Under **FACA § 10(e) and 41 CFR § 102-3.120**, each federal advisory committee is required to have a DFO, in this case a DOE employee who works closely with the Board. The DFO for the EM SSAB is in the Office of Intergovernmental and Stakeholder Programs. The DFO may designate to local DOE field site employees the responsibility to provide day-to-day management of the boards. These employees are known as DDFOs. A Federal Coordinator may be appointed by the appropriate site official to assist the DDFO in board activities, but this position cannot fulfil the responsibilities assigned to the DFO/DDFO under the Federal Advisory Committee Act (FACA). Federal Coordinators generally facilitate the activities of the local board, bring policy-related and other key issues to the attention of the DDFO, and provide administrative and some managerial support for the board. For instance, some Federal Coordinators work with the board and, particularly the Chair, on agenda creation, presentation and material preparation, and other duties as they are capable. While contractor staff may assist in carrying out described responsibilities, the federal employees (the DDFO, in particular) are accountable for board management.

The DFO/DDFO, per the requirements of FACA and the CFR, will:

- Call for and attend board meetings. **FACA § 10(e)&(f), 41 CFR § 102-3.120(a),(c)&(e)**
- Adjourn board meetings if it is in the public interest. **FACA § 10(e), 41 CFR § 102-3.120(d)**
- Approve meeting agendas. **FACA § 10(f), 41 CFR § 102-3.120(b)**
- Ensure required records on board costs and membership are maintained, as each agency needs to keep records that will fully disclose the disposition of any funds at the disposal of the board. **FACA § 12(a); 41 CFR § 102-3.175(b)**
- Ensure that detailed minutes of meetings, containing items specified in **41 CFR § 102-3.165**, are prepared and duly certified. **FACA § 10(c), 41 CFR § 102-3.165**

DOE Manual 515.1-1 requires that the DFO/DDFO, with Federal Coordinator assistance, as appropriate,

- Ensure that conflict of interest regulations are followed. **DOE Manual § IV.6**
- Arrange for reimbursement of travel expenses as necessary. **DOE Manual § V.6.a.(2).(f)**
- Ensure that each board meeting is held at a reasonable time and in a manner or place reasonably accessible to the public. **DOE Manual § V.3**

To enhance compliance with FACA, the CFR, and DOE policy, the DFO/DDFO/Federal Coordinator will:

- Complete Federal Advisory Committee Act 101 training prior to conducting DDFO/Federal Coordinator activities.
- Complete Federal Advisory Committee Act 201 training within 6 months of being appointed.
- Attend/participate in any board activity where board business will be conducted. This includes administrative meetings and subcommittee meetings.
- Encourage the board to listen carefully to all points of view and to work toward developing group advice.
- Provide information for *Federal Register* notices within the required timeframe to the Office of Intergovernmental and Stakeholder Programs and work closely with field site Public Affairs to issue broad local notification about EM SSAB meetings and activities to, e.g., the local media, public reading rooms, and public libraries.
- Ensure that the board has the opportunity to offer advice and recommendations on work plan items. To support this, the DFO/DDFO/Federal Coordinator will
    - Ensure that EM's decision-making process is clearly communicated.
    - Inform the board members of EM programs, projects, and activities directly affecting the EM SSAB mission and purpose.
    - Work closely and cooperatively with the board to prioritize issues.
    - Work with site management, the DFO, and the local board to develop annual work plans and to approve those work plans on the agency's behalf.

D. EM SSAB Members

The success and effectiveness of the EM SSAB depends largely upon the interest, commitment, input and integrity of its members. EM SSAB members are expected to

- Attend meetings and participate in an open, constructive, and respectful manner.
- Provide advice and recommendations to DOE decision-makers at the field and DOE-HQ levels on relevant EM issues.
- Review, evaluate, and comment on EM documents and other materials.
- Members who are appointed to represent a specific organization are expected to report to those groups on board activities and issues.
- Share with their community information on board activities, invite public participation and to promote interest for potential new members. These kinds of activities, however, are voluntary and are not a requirement for membership.

- When sharing their experiences with other community groups about their position on a local board, speak and/or participate in their personal capacities, not representing the local board. Members asked to participate in community events in their official capacity as a board member must consult with the local board DDFO.

Operating a Local Site-Specific Advisory Board

A. Public Participation and Record-Keeping

Public Participation

In accordance with FACA and the CFR

- Each advisory board meeting shall be open to the public. **FACA § 10(a)(1)**
    - Although subject matter may indicate the need to close a meeting (e.g., for security considerations), **FACA § 10(d)** requires the head of the agency to which the committee reports to approve, in writing, closed sessions of the board. **41 CFR § 102-3.155**
- Each meeting shall be held at a reasonable time and in a manner or place reasonably accessible to the public at facilities that are readily accessible to and usable by persons with disabilities. **41 CFR § 102-3.140(a**)
- Any member of the public shall be permitted to file a written statement with the board. **41 CFR § 102-3.140(c)**
- Any member of the public shall be permitted to speak at designated times. **FACA § 10(a)(3); 41 CFR § 102-3.140(d); DOE Manual § V.3.a.(2).(b)**
- Any meeting conducted in whole or part by teleconference, videoconference, the Internet or other electronic medium must meet the requirements of **41 CFR** Subpart D; **41 CFR § 102-3.140(e)**
- Subcommittees may be formed for each local site chapter of the EM SSAB with the approval of the DFO or DDFO. The objectives of the subcommittees are to make recommendations to the full local board with respect to matters which are related to the responsibilities of the full local board. Such subcommittees or workgroups may not work independently and must report their recommendations and advice to the full local board for deliberation and discussion. Subcommittees have no authority to make decisions on behalf of the local board, nor can they report directly to DOE.

To enhance compliance with FACA, the CFR, and DOE policy, EM requires that

- Subcommittee meetings are open to the public and should be noted as such on the local board website. In addition, at least one public comment period should be set

aside during the meeting. At the discretion of the local site management, members of the public may participate in subcommittee meetings in accordance with the EM SSAB Charter but cannot hold leadership roles.

In accordance with the DOE Manual,

- Media representatives attending and reporting on meetings are at liberty to use tape recorders, cameras, and electronic equipment for broadcast purposes. The use of such equipment must not interfere with the orderly conduct of the meeting. To preclude any disruption, news media personnel should be encouraged to position all equipment before the meeting and to defer removal until an ample intermission period or meeting adjournment. **DOE Manual § V.3.b.**

Public Notification

In accordance with FACA and the CFR,

- Notice must appear in the *Federal Register* at least 15 calendar days prior to EM SSAB public meetings. **FACA § 10(a)(2) and 41 CFR § 102-3.150(a).**
- All meetings shall have the advance approval and be attended by the DFO and/or DDFO. **FACA § 10(e)&(f); 41 CFR § 102-3.120(a)&(c)**

In accordance with the DOE Manual,

- Local DOE operations, field, or area offices must ensure that *Federal Register* notices are sent to the Office of Intergovernmental and Stakeholder Programs in timely manner. Whenever possible, 37-day notice will be given. **DOE Manual § V.3.c**

To enhance compliance with FACA, the CFR and DOE policy, EM requires that

- *Federal Register* notices also include the locations where meeting minutes will be made available to the public, an individual to contact to acquire copies of the minutes, and information on the public comment period.
- Meetings are publicized on the board website and in other places that are likely to attract public participation.
- Local DOE operations, field, or area offices ensure that timely notification is provided to the Office of Intergovernmental and Stakeholder Programs in the event a public meeting has been cancelled following the original submission of the *Federal Register* notice.

Minutes and Records

In accordance with FACA and the CFR,

- Detailed minutes of each advisory committee meeting shall be kept on file**. FACA §10(c), 41 CFR § 102-3.165**
- The DDFO must ensure that the meeting minutes are certified by the Chair within 90 calendar days of the meeting to which they relate (**41 CFR § 102-3.165)**
- The local boards and the field offices must maintain in a single location for public inspection and copying copies of records, reports, minutes, transcripts, drafts, working papers, appendixes, studies, agenda, or other documents which were made available to or prepared for or by each local board. **FACA § 10(b); 41 CFR § 102-3.170**
- The field offices and the DDFOs must keep records to fully disclose the disposition of any funds which may be at the disposal of its advisory committees and the nature and extent of their activities. **FACA § 12(a); 41 CFR § 102-3.175(b)**
    - The multi-site structure of the EM SSAB necessitates that fiscal records be developed and maintained at local sites.

In accordance with DOE Manual 515.1-1,

- The minutes must include names of any member who may have recused themselves from a meeting or a portion of it and their reason(s) for doing so. **DOE Manual § V.5.a.(2)**
- Board minutes must be posted on the board webpage within 90 days after the meeting.

To enhance compliance with FACA, the CFR and DOE policy, EM requires that the following electronic submissions be made:

- One copy of all local board reports, minutes, transcripts (where applicable), recommendations and responses, self-evaluations, and EM SSAB work plans to the local reading room and/or other appropriate information resource center(s).
- One copy of each EM SSAB recommendation and the EM response to the DFO at DOE-HQ for files.
- One copy of minutes, annual reports, self-evaluations, and work plans to the DFO at DOE-HQ for files.

Subcommittee and Administrative Meetings

Subcommittees (also referred to locally as “committees”) of the local boards are not required to comply with the provisions of FACA so long as the full local board deliberates on any recommendations before they are approved. **41 CFR § 102-3.35 and 102-3.145.**

The objectives of the subcommittees are to make recommendations to the full local board with respect to particular matters which are related to the responsibilities of the full local board.

Subcommittees may not work independently and must report their recommendations and advice to the full local board for deliberation and discussions.

Subcommittees have no authority to make decisions on behalf of the local board, nor can they report directly to DOE.

To ensure transparency and open communication, EM requires that

- Subcommittee formation must be approved by the DFO/DDFO.
- The DDFO must attend, or designate an EM federal official to be present, during any board activity where board business will be conducted. This includes administrative and subcommittee meetings.
- Subcommittee meetings are open to the public and members of the public can serve on subcommittees.
    - There must be more appointed board members than members of the public serving on the committee.
- Only appointed Board members may serve in leadership roles.
- Subcommittee meetings should be listed on the local board website but do not require a Federal Register notice unless a quorum of the board is expected.
- At least one public comment period should be set aside during the meeting.
- Meeting notes should be developed to capture the discussion and proposed products developed during the meeting. The notes do not have to be published but should be made available if requested.

<u>Annual Comprehensive Review to Headquarters</u>

The DFO is required each year to provide to the GSA Committee Management Secretariat (through the DOE Committee Management Office) an Annual Comprehensive Review (formerly Annual Report) on the activities of the EM SSAB during the preceding fiscal year. **DOE Manual VII. 3(b)**. Accordingly, local EM SSAB DDFOs and Federal Coordinators must submit each local board's data to the DFO within one month of the close of each fiscal year.

In accordance with FACA and the CFR,

- An informational report from DOE is provided to the GSA at the close of each fiscal year. **41 CFR § 102.105(e) and 102-3.175(b)**.
    - The report includes

- The activities, status, and changes in EM SSAB composition during the fiscal year
- The dates of EM SSAB meetings and names and occupations of its members
- The estimated annual cost to DOE to fund, service, and supply the EM SSAB
- Any reports and recommendations submitted by the EM SSAB.

In accordance with the DOE Manual 515.1-1,

- The CMO will issue instructions to the DFO regarding reporting requirements, procedures, and submission dates. The CMO will then be responsible for coordinating the Annual Comprehensive Review. **DOE Manual § VII.3.b.2**
- The DFO, and subsequently the DDFO, is responsible for accurately and completely compiling the requested information by the due date assigned by the CMO. **DOE Manual § VII.3.b.2**

B. Board Recommendations and DOE Responses

FACA, the CFR, and the DOE Manual do not provide specific parameters for Board recommendations or DOE responses. The CFR does suggest that EM continually seek feedback from the Board members and the public regarding the effectiveness of the Board's activities. At regular intervals, EM should communicate to the Board members how their advice has affected DOE programs and decision-making. **41 CFR § 102-3.95(e)**

To enhance compliance with FACA, the CFR, and DOE policy, EM requires that

- In general, DOE should strive to reply to site-specific recommendations within 90 days of receipt. Responses should be in writing. A copy of any recommendation and response should be sent to the Office of Intergovernmental and Stakeholder Programs.

DOE written responses should include the following:

- A clear statement of acceptance or rejection of the recommendation, in whole or in part;
- If the recommendation is accepted in whole or in part, a statement about how the changes will be implemented and in what time frame;
- If the recommendation is rejected in whole or in part, a substantive reason for the decision, as well as possible alternatives for addressing the concerns or issues raised in the recommendation; and
- If unresolved issues still remain, DOE may indicate this in written correspondence to the local EM SSAB with the goal of establishing (or continuing) a near-term dialogue.

C. Membership

Membership Composition

FACA requires that membership be fairly balanced in terms of views represented and functions to be performed. In this regard, local sites must make vigorous outreach efforts and be able to demonstrate that they have attempted to recruit members from all segments of the communities directly affected by EM site activities. In order to comply with both FACA and departmental policies regarding balance and diversity requirements of advisory committees, the DOE Offices of EM, Management (MA), and GC closely scrutinize Board membership. Additionally, a Membership Balance Plan has been established that provides specifics on board point of views, balance factors, and candidate identification process.

In accordance with FACA and the CFR,

- The Board must be "fairly balanced in terms of the points of view represented and functions to be performed." **41 CFR § 102-3.60(b)(3), Appendix A to Subpart B**

In accordance with the DOE Manual 515.1-1,

- In selecting membership nominees, attention must be given to the conflict of interest considerations discussed in section IV of the guidance. Pursuant to DOE policy, employees of Management and Operating (M&O) and Management and Integration (M&I) DOE contractors may be appointed only when necessary to achieve balance or diversity on a local board. Such individuals must receive a written waiver from the DOE Committee Management Officer. **DOE Manual § IV. 3.b**

The EM SSAB Charter states that "Members shall be from communities directly affected by EM Program activities and reflect a full diversity of viewpoints including environmental, public health, civic groups, workforce, local and Tribal government, education, local businesses, economic development; and demographics such as ethnicity, age, and gender." **EM SSAB Charter § 12. d.**

In order to achieve balance required by FACA, the CFR and DOE Policy, EM nomination and appointment of members shall be accomplished using procedures designed to ensure a diverse board membership and a balance of representative viewpoints, including, but not limited to, the following:

- Information available from the U.S. Census Bureau may serve as a source for seeking to have board membership reflect the diversity in the affected community and region. Board members are typically drawn from stakeholder groups and organizations or have specific viewpoints, such as
    - Residence in an area potentially affected by EM cleanup activities

    - Local governments
    - Tribal governments
    - Environmental and public health organizations
    - Labor organizations
    - Educators
    - Tribal, Hispanic and other Minority organizations
    - Business groups
    - Civic groups. **DOE Manual § IV. 3.a2.**
- Federal, state, tribal and local government officials are encouraged to recommend prospective members for the local EM SSAB to EM.
- The Assistant Secretary or DOE Field Managers may request that other federal, state, local, or tribal governments name liaisons to the EM SSAB to provide information and represent their agency's interests at local meetings. Liaisons may attend and participate in board meetings, but do not have voting privileges and are not included in a quorum.

<u>Member Appointment and Reappointment</u>

In accordance with FACA and the CFR,

- Membership terms are at the sole discretion of the appointing or inviting agency. **41 CFR § 102-3.130(a)**

In accordance with the DOE Manual 515.1-1,

- Appointments should be staggered. **DOE Manual § IV.2.e.1**
- GC and the CMO will review nominations to the Board to ensure compliance with FACA requirements, as well as GSA and departmental requirements. **DOE Manual § I.6.g, IV.2.b**
- EM must include the following information in member nomination packages (see **DOE Manual § IV. 5.a**):
    - A memorandum from the field manager to the Assistant Secretary for EM recommending the nominees for membership;
    - A copy of the current charter;
    - Up-to-date biographies for all proposed and continuing members;
    - The names and companies of DOE M&O and M&I contractor employees requiring letters of exception to serve on the Board;
    - The names and companies of other DOE contractor employees or consultants proposed to serve on the Board;
    - Recruitment efforts conducted to attract new members in the current membership drive;
    - Completed membership criteria matrices for proposed and current members; and
    - Letters of invitation to each member for signature by the Assistant Secretary.

- The Secretary of Energy has delegated authority for EM SSAB member appointments and reappointments to the Assistant Secretary for EM. In limited cases (specifically, for site manager appointments to replace members who are not serving out their terms) and with prior coordination with the EM Office of Intergovernmental and Stakeholder Programs and the DOE Office of General Counsel, the authority to appoint has been delegated to the Field. (See § III.C.)
- Appointments and reappointments require concurrence from the Office of Intergovernmental and Stakeholder Programs, GC, MA, and the CMO. **DOE Manual § IV.5.b**
- DOE retains appointment and removal authority. **DOE Manual § IV.2.g**

Delegated Authority to the Field for Member Appointments

To enhance compliance with FACA, the CFR and DOE policy, the Assistant Secretary for EM has delegated limited authority to appoint new EM SSAB members to the DOE EM field office, with prior coordination with the Office of Intergovernmental and Stakeholder Programs and the Office of General Counsel.

- The field can replace members who have resigned with time remaining in their membership terms under the following terms and conditions:
  - The appointments can be made *only* for the remainder of the previous member's term
  - No more than 20% of members can be appointed by any one site in any given calendar year
  - When appointing new members under this delegated authority, DOE field office managers must comply with FACA, GSA and DOE regulations, including appropriate conflict-of-interest restrictions.
- The DFO must be advised of all such appointments, and all relevant information must be provided (i.e., name, contact information, biography, and matrix information) in a timely manner. The DFO and GC must concur on the site appointment.

Delegated Authority to the DFO to Appoint Interim Members

To ensure functionality of the board, current members who have been formally proposed for reappointment to the Assistant Secretary in accordance with DOE policy may continue to serve in an interim status for up to 90 calendar days after their current term expires. Individuals in interim membership status must continue to abide by all laws and policies applicable to their membership on the board. All board members serve at the pleasure of the Secretary, and any membership on the board may be terminated without notice.

Removal and Resignation of Members

Local offices may recommend to the Designated Federal Officer that local board members be removed from the EM SSAB as deemed necessary to carry out the mission of the EM SSAB. As members serve at the pleasure of the Assistant Secretary for EM, recommendations for removal must be approved by the Assistant Secretary, after concurrence by the Designated Federal Officer. (See section II.D of this guidance for EM SSAB member roles and responsibilities.)

To enhance compliance with FACA, the CFR and DOE policy, EM requires that

- Members who wish to resign from the Board are requested to submit their resignation in writing to the local DDFO, the local EM SSAB Chair. The DDFO is responsible for notifying the DFO in the Office of Intergovernmental and Stakeholder Programs of the resignation.

Community Education and Member Recruitment

To enhance compliance with FACA, the CFR and DOE policy, EM requires that

- Field office staff ensure the community is made aware of and engaged in local board activities.
- DDFOs and Federal Coordinators ensure that board activities are appropriately coordinated with other field office public involvement activities.
- The board members represent a full diversity of viewpoints and demographics that are reflective of the community from which the board draws its members. Recruitment efforts should be targeted to achieve diversity through consideration of the communities affected by DOE's cleanup activities and the individuals who reside in those communities.
- Community education and membership recruitment efforts may include, but are not limited to: new media tools, targeted mailings, speaking engagements, recruiting tables at public events, notices in newsletters, press releases, advertisements in local and regional papers, advertisements on websites, and radio and television advertisements.

II. Conflict of Interest

Members of the EM SSAB are not Federal employees. However, in order to protect the integrity of the EM SSAB and the credibility of its work product, as a matter of policy, DOE requests that representative members be recused from working on matters before the advisory committee in which they and others (e.g. some family members and entities they are affiliated with) have a direct financial interest.

Per DOE M 515.1-1, Advisory Committee Management Program, employees of DOE site/facility management and operating or management and Integration contractors are ineligible for advisory committee membership. Appointing, or reappointing employees, of these entities as local board members requires a memorandum of exception that provides a justification for the appointment, and why the appointment will not result in a conflict of interest; and must be included in the board's membership package. The CMO has the authority to approve a memorandum of exception.

To enhance compliance with FACA, the CFR and DOE policy, it is EM policy that the appointment or reappointment of employees of prime contractors (defined as a contractor with a direct contract with the DOE Office of EM) is also subject to the above requirements of DOE M 515.1-1.

If such a member is appointed, the DFO and local site DDFO are required to ensure that the appointment of this member will not result in a conflict of interest or appearance of such conflict, including ensuring that the member be recused from voting on issues that would have a direct and predictable effect on his/her financial interests resulting from any employment interests.

All members should advise the local board chair and the DDFO of a potential or actual conflict in advance of any discussion of such. Meeting minutes must contain the names of any members who recused themselves from the meeting, the reason for the recusal and a statement that they did not participate in the matter from which they were recused, or that they were not present during the discussion.

The Assistant General Counsel for General Law reviews new member qualifications for conflict-of-interest issues and proposed mid-term replacements (section III.C.3 of the guidance). If a proposed mid-term appointment exhibits a potential conflict or conflict of interest, the local DDFO must provide any relevant materials and consult with the Designated Federal Officer and the Office of the Assistant General Counsel for General Law if necessary.

All Board members must adhere to the following general conflict-of-interest requirements:

- A member shall refrain from any use of his or her membership, which is, or gives the appearance of being, motivated by the desire for private, professional, or financial gain;
- A member shall not use either directly or indirectly for private or professional gain for him/herself or for his/her represented group any inside information obtained as a result of advisory committee service;
- A member shall not use his or her position in any way to coerce or give the appearance of coercing another individual to provide a financial benefit to the member with the conflict of interest or any person with whom that member has family, business, or financial relationships.

III. Funding and Other Support

In 1997, funding of the local boards under the EM SSAB became the responsibility of the DOE field offices. Accordingly, DOE field office managers provide adequate funding to local boards to enable them to operate efficiently and effectively.

In accordance with FACA and the CFR,

- DOE will provide adequate support services as necessary. **FACA § 12(b); 41 CFR § 102-3.95(a)**

To enhance compliance with FACA, the CFR and DOE policy, EM requires that

- EM SSAB procurement mechanisms will be structured and managed to ensure proper stewardship of this stakeholder activity and to increase accountability and visibility of resources provided and subsequently used. The three options for funding administrative support for the EM SSAB are:
    - Non-Profit Organization (Section 501(c) of the IRS Code)
    - Direct DOE Federal Management and Support
    - Support Services Contract with a Section 8(a) Small Business.

To enhance compliance with FACA, the CFR and DOE policy, EM requires that

- Adequate support services may include, but are not limited to
    - Office space
    - Necessary supplies and equipment
    - Federal staff support
    - Coordination of meetings and agendas
    - Support monitoring emerging issues and activities
    - Funding for an independent facilitator if necessary to ensure that Board members set and reach objectives, maintain focus, work as a team, strive for consensus, and operate at maximum efficiency and
    - Funding for independent technical reviews of key issues or ongoing technical assistance to the board. However, field offices should ensure that technical assistance funding is used to complement, rather than duplicate, the technical programs of DOE and its regulating agencies.
- After the annual work plan is approved by the DDFO, the DOE operations, field, or area offices should provide sufficient funding to carry out the work plan.
- DDFOs and Federal Coordinators should report the level of funding, including technical assistance funding, to the Designated Federal Officer in the form of an Annual Comprehensive Review of all EM SSAB activities at the end of each fiscal year.

VI. Compensation and Travel Expenses

A. Board Service Is Not Compensable

The EM SSAB Charter provides that: "Members of the Board serve without compensation; however, members may be reimbursed in accordance with the Federal Travel Regulations for authorized travel and per diem expenses incurred while participating in Board activities."

In accordance with the DOE Manual 515.1-1,

- (Coverage) Members will be reimbursed for travel expenses and per diem only when they are on site approved board business while away from their residence or regular places of business. **DOE Manual *§* VI.3.a**
- (Tickets) Generally, DOE will provide members with a Government fare common carrier ticket. If DOE is unable to provide a member with a common carrier ticket, the member may use personal means to purchase transportation, but when costs exceed $100, a senior DOE official is required to review the circumstances of the purchase before reimbursement, which may not exceed the Government authorized fare. **DOE Manual § VI. 3.b**
- (Major travel to and from meetings) Airfare is limited to the regular, round trip, coach-class fare or, when available, Government contract airlines between the member's residence or regular place of business and the meeting site. Train travel is authorized when it is advantageous to the Government. A member may also travel to and from the meeting in his/her private vehicle, and DOE will reimburse the member at the mileage allowance rate and for fees. **DOE Manual § VI.3.c**
- DOE will reimburse members for lodging, meals, and incidental subsistence expenses associated with site approved travel for meetings using a per diem allowance (i.e., a daily payment instead of reimbursement for actual expenses). **DOE Manual § VI.3.e**

To enhance compliance with FACA, the CFR and DOE policy, EM requires that

- Members with questions on travel requirements or reimbursements should consult with the local field office prior to commencing travel or completing the reimbursement voucher.
- In addition, DDFOs and Federal Coordinators are responsible for determining, after consultation with appropriate offices and/or individual at their field sites, whether it is appropriate to fund official travel for non-members to specific EM SSAB-related activities, and, if so, how it should be funded.
- Funding and compensation for travel is considered part of the annual budget allocation for the local board.

VII. Food and Refreshments

The Committee Management Secretariat at US General Services Administration does not have any government-wide guidance on providing refreshments at government-sponsored meetings or conferences. The legality of decisions to provide light refreshment should be determined by agency counsel on an event by event and department by department basis.

In general, a Federal agency or department may not use appropriated funds to purchase items such as food and refreshments because they are considered personal expenses. Although desirable, serving such items at meetings is not considered a necessary expense and thus it cannot be provided with appropriated funds.

There are limited situations, defined by specific statutory authority, in which the provision of food by agencies is permitted. For example, Federal Travel Regulation (FTR) allows for the Department of Energy (DOE) to pay EM SSAB members a per diem if the member is in a travel status. In addition, food and refreshments may be provided if the meeting facility provides the food at no added cost to the government. Some hotels include food and refreshments in the cost of renting the facility and the hotel does not itemize this cost separately on the bill. In this situation, the fee for the rental facility must be "all-inclusive," meaning it must remain the same whether or not the food is accepted. Accordingly, if the invoice for the rental facility includes a separate line item regarding food or refreshments it may not be paid for and must be removed from the invoice.

There are times when non-Federal entities, including contractors, offer to donate or pay for the food and refreshment at EM SSAB meetings. Federal employees are reminded that the Federal ethics laws prevent them from accepting a gift that is provided by a prohibited source (e.g., contractor) or because of their official position. This same restriction has been extended by way of DOE policy to EM SSAB members. Food and refreshments are considered gifts. There are exceptions to this rule. The most applicable exception that allows Federal employees and EM SSAB members to accept food and refreshments is when the per person cost of the food and refreshments is less than $20 per occasion and does not exceed $50 from the same source in aggregate in the calendar year. As a reminder, contractors might offer to pay the costs of food and refreshments at EM SSAB meetings; however, the contractor might submit this expense to DOE for reimbursement. Consistent with the authorities above, DOE is not authorized to reimburse a contractor for food and refreshments at EM SSAB meetings except in very limited circumstances.

This guidance applies to both public meetings, subcommittee meetings, and meetings that are considered administrative and preparatory.

VIII. Board Termination

The EM SSAB Charter provides that the Board terminates two years from the most recent Charter filing date and may not meet or take any action if the Charter is not renewed biennially.

- Criteria for termination of the EM SSAB are contained in **FACA § 14, 41 CFR § 102-3.55(a) and DOE M 515.1-1**

To enhance compliance with FACA, the CFR and DOE policy, EM requires that

- Once the EM mission is completed at a site where there is a local board under the EM SSAB Charter, the local board will be terminated.
- Other criteria for termination include the criteria in FACA and the CFR. The decision to terminate a committee may include a determination that the advice is no longer essential to EM or is no longer in the public interest; that the committee has not been staffed for one year; or that the committee has not met for a two-year period. **DOE Manual § III.8.a**
- If the chartered purpose for a local board cannot be fulfilled, the DDFO, in consultation with DFO and members of the local EM SSAB, will prepare a timetable for disestablishing the local board. The resulting termination package will be sent through the same concurrence chain as a member appointment package.
- The package, to be signed by the field office manager at the local board's site, should note the reasons for the board's suggested termination, as well as its accomplishments over the years.

In accordance with the DOE Manual,

- Letters of appreciation from the Assistant Secretary to the Board members for services rendered must be included in the termination package. **DOE Manual § III.8.b.1**

VIII. Acronyms & Definitions

CFO Chief Financial Officer
CFR Code of Federal Regulations
CMO Committee Management Officer
DDFO Deputy Designated Federal Officer
DFO Designated Federal Officer
DOE U.S. Department of Energy
EM Office of Environmental Management
EM SSAB Environmental Management Site-Specific Advisory Board
EM-1 Assistant Secretary for EM
EPA Environmental Protection Agency
FACA Federal Advisory Committee Act
FTR Federal Travel Regulations
GC General Counsel
GSA General Services Administration
MA Office of Management
NE Office of Nuclear Energy
NNSA National Nuclear Security Administration
MA Office of Management and Administration
OMB Office of Management and Budget
SC Office of Science

Advisory Committee: any committee, board, commission, council, conference, panel, task force, or other similar group, or any subcommittee or other subgroup thereof which is established by statute, established or utilized by the President, or established or utilized by one or more agencies, in the interest of obtaining advice or recommendations for the President or one or more agencies or officers of the Federal Government. **FACA § 3(2)**

EM SSAB Charter: The governing document for the EM SSAB, including all local boards, which is renewed biannually and approved by the CMO.

DOE Field Office: Any DOE area, field, and site offices, and/or business centers located outside the Washington, D.C. area.

DOE Manual: "Advisory Committee Management Program" Manual, DOE M 515.1-1, 10/22/07

Subcommittee: any subset, task force, panel, or other similar group made up of appointed members of the board that gathers to discuss board-related topics or to conduct board business.

IX. Applicable Law, Regulations, Orders and Policies

Statutes: Federal Advisory Committee Act (FACA), 5 U.S.C. App. 2 (1997) (original version at Pub. L. No. 92-463, 86 Stat. 770 (1972))

http://www.gsa.gov/portal/content/104514

Regulations: Federal Advisory Committee Management, 41 CFR Part 102-3. See also: 52 Fed. Reg. 45926 (1987). http://www.access.gpo.gov/nara/cfr/waisidx_99/41cfr105-54_99.html

Specific Agency Regulations: Office of Human Resources and Administration, U.S. Department of Energy (DOE), Pub. No. DOE M 515.1-1, *Advisory Committee Management Program* (2007) (DOE Manual). https://www.directives.doe.gov/directives/0515.1-DManual-1/view

Charter: Office of Environmental Management, Office of Intergovernmental and Stakeholder Programs, U.S. Department of Energy Amended Charter: Environmental Management Site-Specific Advisory Board (2022). http://energy.gov/sites/prod/files/em/EMSSABCharter-FINAL.pdf

Membership Balance Plan: Contact the Office of Environmental Management, Office of Intergovernmental and Stakeholder Programs

Delegations:

- Department of Energy Delegation Order No. 00-002.00B to the Under Secretary for Energy, Science, and Environment (October 4, 2004).
- https://www.directives.doe.gov/sdoa/delegations-documents/002.00B/view

- Department of Energy Re-delegation Order No. 00-002.03B to the Assistant Secretary for Environmental Management (January 29, 2007).
- https://www.directives.doe.gov/sdoa/delegations-documents/002.03B/view

EM SSAB Member Code of Conduct

The success and effectiveness of this board depends largely upon the interest, commitment, input, and integrity of its members. All EM SSAB members are expected to attend meetings and participate in an open, constructive, and respectful manner.

The following code of conduct more clearly spells out the expectations of all EM SSAB members. Adherence will be considered during the reappointment process. Repeated non-compliance with the code of conduct will be considered detrimental to the group's purpose, and member removal may be sought by the Deputy Designated Federal Officer (DDFO).

- Adhere to your board's attendance policy. In the event of an absence, notify the DDFO or Federal Coordinator in advance. Be prompt in arriving to the meeting and in returning from breaks.
- Treat members with respect both during the board meetings and outside of the meeting. Be respectful of other people's ideas or situations when they talk.
- Talk one at a time, waiting to be recognized by the Chair or designated facilitator. Each member has the right to participate without any one dominating the discussion.
- Stay on the topic being discussed, in accordance with the annual work plan.
- Address any concerns about the discussion or the meeting with the Chair or facilitator. It is the Chair's job to bring the meeting to order. If you feel you can't speak about your issues or concerns during the meeting, you can talk to the DDFO, Federal Coordinator, or designated facilitator after the meeting or during a break.
- Avoid techniques such as "bargaining" and acquiescence simply to avoid conflict and reach agreement. Differences of opinion are natural, expected, and lead to better solutions. Avoid engaging in parliamentary maneuvering (e.g., trading votes) as this is in direct opposition to the board's purpose.
- Avoid responding directly to public comments during this period at board meetings. Any comments, questions, or requests regarding public comments should be directed to the Chair or the DDFO for disposition.
- Don't use your title or represent the board outside of an EM SSAB meeting.
- Report any potential conflicts of interest – even something that gives the appearance of a conflict of interest – to the DDFO or Federal Coordinator. Conflicts of interest are defined as any area that has direct and predictable effect on the companies, organizations, agencies, or other entities with whom you or a member of your family are personally associated or in which you have a financial interest. The DDFO will discuss the creation a recusal plan when it determined there is a conflict of interest or the appearance of a conflict of interest.
- To maintain the credibility of the Board's work product, if you suspect that an outside entity is attempting to influence your decisions, please report this immediately to your DDFO or Federal Coordinator.

July 2018

Abbreviations/Acronyms List for Environmental Management Projects

AM – action memorandum
ACM – asbestos containing material
ARARs – Applicable or Relevant and Appropriate Requirements
ARRA – American Recovery and Reinvestment Act
BCV – Bear Creek Valley
BG – burial grounds
BV - Bethel Valley
CARAR – Capacity Assurance Remedial Action Report
CART - carbon steel casing dollies
CBFO – Carlsbad Field Office
CERCLA – Comprehensive Environmental Response, Compensation and Liability Act
CD – critical decision
CH – contact handled
CNF – Central Neutralization Facility
COLEX – column exchange
CS – construction start
CY – calendar year
D&D – decontamination and decommissioning
DARA – Disposal Area Remedial Action
DNAPL – Dense Non-Aqueous Phase Liquids
DOE – Department of Energy
DSA – documented safety analysis
DQO – data quality objective
EE/CA – engineering evaluation/cost analysis
EFPC – East Fork Poplar Creek
EM – environmental management
EMDF – Environmental Management Disposal Facility
EMWMF – Environmental Management Waste Management Facility
EPA – Environmental Protection Agency
EQAB – Environmental Quality Advisory Board
ETTP – East Tennessee Technology Park
EU – exposure unit
EV – earned value
FACA – Federal Advisory Committee Act
FCAP - Facilities Capability Assurance Program
FFA – Federal Facility Agreement
FFS – Focused Feasibility Study
FPD – federal project director
FY – fiscal year
GIS – geographical information system
GW – groundwater

GWTS – groundwater treatability study
HQ – Headquarters
HRE – Homogenous Reactor Experiment
IROD – Interim Record of Decision
ISD - In-Situ Decommissioning
LEFPC – Lower East Fork Poplar Creek
LGWO – Liquid and Gaseous Waste Operations
LLW – low-level waste
MLLW – mixed low-level waste
MSRE – Molten Salt Reactor Experiment
MTF – Mercury Treatment Facility
MV – Melton Valley
NaF – sodium fluoride
NDA – non-destructive assay
NEPA – National Environmental Policy Act
NNSS – Nevada National Security Site (new name of Nevada Test Site, formerly NTS)
NPDES – National Pollutant Discharge Elimination System
NPL – National Priorities List
OR – Oak Ridge
ORGDP – Oak Ridge Gaseous Diffusion Plant
OREIS – Oak Ridge Environmental Information System
OREM – Oak Ridge Office of Environmental Management
ORNL – Oak Ridge National Laboratory
ORO – Oak Ridge Office
OROP - Oak Ridge Oxide Processing
ORR – Oak Ridge Reservation
ORRR – Oak Ridge Research Reactor
ORRS – operational readiness reviews
PaR – trade name of remote manipulator at the Transuranic Waste Processing Center
PCB - polychlorinated biphenyls
PCCR – Phased Construction Completion Report
PM – project manager
PP – Proposed Plan
PPE – Personal Protective Equipment
QAPP – Quality Assurance Project Plan
RA – remedial action
RAR – Remedial Action Report
RAWP – Remedial Action Work Plan
RCRA – Resource Conservation Recovery Act
RDR – Remedial Design Report
RDWP – Remedial Design Work Plan
RER – Remediation Effectiveness Report
RFI – Request for Information

RGRS – Reactive Gas Removal System
RH – remote handled
RI/FS – Remedial Investigation/Feasibility Study
RIWP – Remedial Investigation Work Plan
RmAR – Removal Action Report
RmAWP – Removal Action Work Plan
ROD – Record of Decision
RSE – Remedial Site Evaluation
RUBB – trade name of a temporary, fabric covered enclosure
S&M – surveillance and maintenance
SAP – sampling analysis plan
SEC – Safety and Ecology Corp.
SEP – supplemental environmental project
STP – site treatment plan
SW – surface water
SWSA – solid waste storage area
Tc – technetium
TC – time critical
TDEC – Tennessee Department of Environment and Conservation
TRU – transuranic, an artificially made, radioactive element that has an atomic number higher than uranium in the periodic table
TSCA – Toxic Substances Control Act
TWPC – Transuranic Waste Processing Center
U – uranium
UEFPC – Upper East Fork Poplar Creek
UPF – Uranium Processing Facility
URS/CH2M – (UCOR) DOE's prime cleanup contractor
VOC – volatile organic compound
VPP – Voluntary Protection Plan
WAC – waste acceptance criteria
WEMA – West End Mercury Area (at Y-12)
WHP – Waste Handling Plan
WIPP – Waste Isolation Pilot Plant
WRRP – Water Resources Restoration Program
WWSY – White Wing Scrap Yard
X-10 – Oak Ridge National Laboratory (refers to the original reactor)
Y-12 – Y-12 National Security Complex
ZPR – Zero Power Reactor

OAK RIDGE OFFICE OF ENVIRONMENTAL MANAGEMENT

OREM
Oak Ridge Office of Environmental Management

The U.S. Department of Energy's (DOE) Oak Ridge Reservation occupies more than 32,000 acres within Anderson and Roane counties in East Tennessee. It contains three sites—the Y-12 National Security Complex (Y-12), Oak Ridge National Laboratory (ORNL), and East Tennessee Technology Park (ETTP).

In previous decades, those sites conducted research and operations that created environmental legacies and placed Oak Ridge on the U.S Environmental Protection Agency's National Priorities List in 1989. Today, OREM is responsible for advancing environmental cleanup at all three sites. Our projects are protecting the region's health and environment by removing risks, enabling modernization at national security and science sites, and transferring cleaned land to the community to boost new economic growth.

PROTECT THE REGION'S HEALTH AND ENVIRONMENT

Our projects are focused on removing hazards or potential risks to human health or the surrounding environment. They involve taking down old and contaminated buildings, removing inventories of radiological waste stored at the site, and addressing any affected soil and groundwater.

MAKE CLEAN LAND AVAILABLE FOR FUTURE USE

Our work at ETTP has transformed a shuttered uranium enrichment complex into a multi-use industrial center. We removed all the old structures and transferred 1,700 acres to the community that are attracting new investments and businesses to the region. We also set aside more than 3,000 acres for conservation and recreational use.

ENABLE RESEARCH AND NATIONAL SECURITY MISSIONS

We are actively demolishing excess and contaminated buildings at Y-12 and ORNL. These projects are helping protect thousands of employees who work at these sites, and they are also clearing space for new facilities that will support research and national security missions.

U.S. DEPARTMENT of ENERGY

ENERGY.GOV/OREM

January 2025

OAK RIDGE OFFICE OF ENVIRONMENTAL MANAGEMENT

Oak Ridge National Laboratory

ORNL employs more than 6,000 researchers and staff who are advancing almost every field of research in DOE's broad portfolio. The site dates back to the Manhattan Project, and many of the facilities in the heart of ORNL were built and operated in the 1940s–1960s.

OREM is slated to remove more than **200 facilities** at ORNL. More than 30 of those structures are considered high-risk buildings due to structural, radiological, or chemical hazards. Major cleanup is already underway. Crews have taken down two former reactor facilities in recent years, and they are busy preparing nearly a dozen other reactor facilities and isotope labs for near-term demolition.

Removing the reactor vessel from the Oak Ridge Research Reactor

The nation's **inventory of uranium-233** is housed at ORNL, and its removal is our highest priority at that site. Processing operations are underway to convert the remaining inventory into a disposal-ready form. Through an innovative partnership with TerraPower, the project is also providing rare medical isotopes for next-generation cancer treatment research. We are scheduled to finish processing and disposing of the remaining material in the late 2020s.

Y-12 National Security Complex

More than 8,000 employees work at Y-12 supporting its mission to maintain the safety, security, and effectiveness of the U.S. nuclear weapons stockpile. Many of the facilities there were constructed and operated during the Manhattan Project and Cold War. Y-12 is ushering in a new chapter with numerous infrastructure projects underway that will keep it at the forefront of its field.

Our cleanup is enabling that transformation from old to new. We anticipate removing nearly **80 facilities** at Y-12 in the decades ahead. Of those, more than 25 are considered high-risk, and a portion of those were deemed "the worst of the worst" in the entire DOE complex in a report to Congress.

Demolition underway on Alpha-2 at Y-12

Crews are already reshaping the landscape. They demolished the former **Biology Complex**, opening an 18-acre area for NNSA to construct its new Lithium Processing Facility. Workers have started tearing down **Alpha-2**. This marks OREM's largest demolition to date at Y-12, and it is the first project to remove a former enrichment building at the site. Crews are also actively preparing **Beta-1**, another former enrichment facility, for near-term demolition.

Before demolition can begin on some of the site's oldest and largest buildings, OREM must complete construction on the **Mercury Treatment Facility**. That work is scheduled for completion in 2027. This facility will prevent mercury releases into the nearby creek as crews demolish massive mercury-contaminated buildings and remove the sources of mercury trapped in the soil beneath them.

East Tennessee Technology Park

The K-25 plant was constructed during the Manhattan Project to enrich uranium for the first atomic weapon using the gaseous diffusion process. Due to the success of this technique, the original plant was expanded during the Cold War, but it was eventually closed in 1987. Shortly after, OREM was formed and began addressing the deteriorating facilities and associated hazards created during decades of uranium enrichment.

The site was renamed the East Tennessee Technology Park in 1997. Along with cleanup, OREM pursued a vision to transform the site from a liability into a multi-use industrial center, national park, and conservation area that benefits the community and creates new economic opportunities. In 2020, OREM completed DOE's largest-ever cleanup effort when it finished taking down 500 structures at the site. Together, those facilities had a footprint that could cover 225 football fields. The final phases of cleanup involve soil and groundwater remediation. Crews finished **soil remediation** in 2024, and OREM is working to complete any needed **groundwater remediation** in the years ahead.

East Tennessee Technology Park

We've transferred more than 1,700 acres of land to the community for reuse and economic development, and more than 900 more are scheduled for transfer in the next three years. This area is now home to more than 20 private businesses that have announced $1.35 billion in investments at the site.

REGULATORY PARTNERSHIPS AND FRAMEWORK

The Federal Facility Agreement (FAA) parties responsible for the safe and efficient cleanup of the Oak Ridge Reservation include:

» DOE's Oak Ridge Office of Environmental Management (OREM)

» U.S. Environmental Protection Agency (EPA) Region 4

» Tennessee Department of Environment and Conservation (TDEC)

UCOR, DOE's environmental management contractor, works with the FFA parties to effectively and expeditiously facilitate regulatory consensus and approval for cleanup actions across the three sites in Oak Ridge.

In 2019, with critical cleanup milestones approaching and the need for a new onsite disposal facility, regulatory delays and technical issues were impacting collaboration and trust among all parties. Recognizing the need to resolve issues and keep cleanup moving forward, the FFA parties committed to a renewed partnership framework.

Strengthened Partnership Framework

A structured, tiered process was developed to:

» Foster collaborative problem solving at all levels; "getting to yes" mindset

» Allow early and timely input to the decision-making partnership by community partners

» Enhance communication

Other measures employed to improve working relationships between FFA parties:

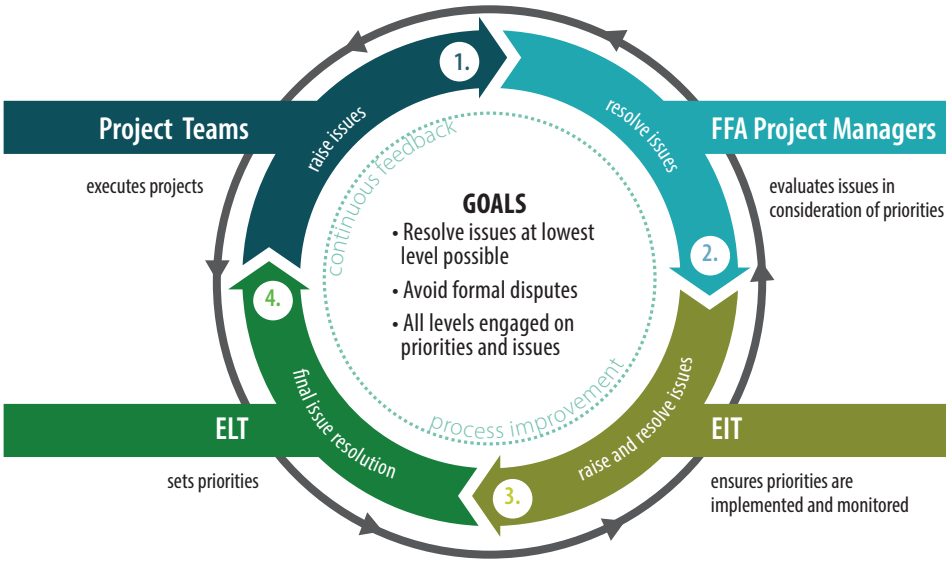
» Quarterly partnership meetings open to all parties: forum for education, process improvement and open discussion

» Monthly project team meetings sharing near real-time data results, discuss document review delays, find solutions as a team

» Collaborative data quality objectives workshops and upfront storyboarding of regulatory documents to identify potential issues early and often

Executive Leadership Team (ELT)
DOE Site Manager with UCOR President, EPA Region 4 Administrator, TDEC Commissioner – sets policy and establishes strategic goals

Emerging Issues Team (EIT)
Senior level managers of each organization – identifies, tracks and works to resolve emerging issues



The success of the framework is attributed to participation and engagement at all levels

OAK RIDGE RESULTS

Since the launch of the renewed regulatory framework, Oak Ridge's cleanup program has accomplished remarkable achievements. By working together, key decision documents are being approved and cleanup is advancing across the Reservation.

Record of Decisions

» Signed ROD for new onsite disposal facility

» Two draft RODs in review for groundwater remedies at the East Tennessee Technology Park

Dispute Resolution

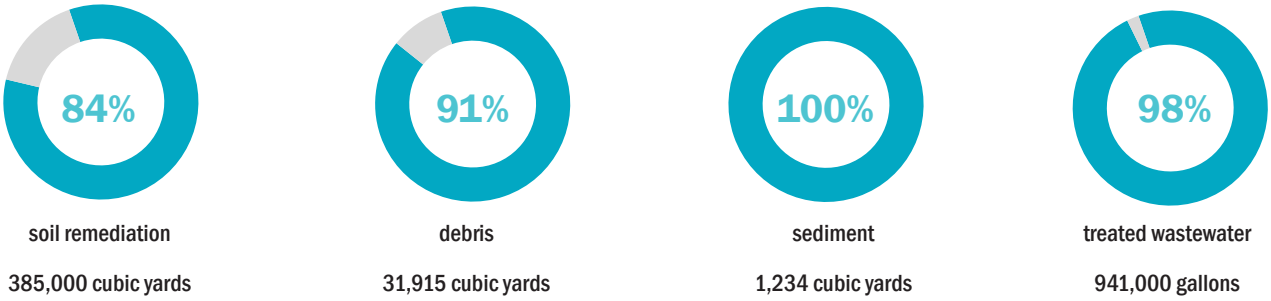
» 18 informal disputes resolved at the Project Team or FFA Project Manager Level

» Today, three new issues have been identified and they are near resolution at the lower levels

Remedial Action Progress

SInce 2020, the Oak Ridge team has been responsible for 61% of the completed and 80% of the newly initiated remedial actions across the DOE-EM Complex.

Oak Ridge share of DOE-EM completed remedial actions in the last three years



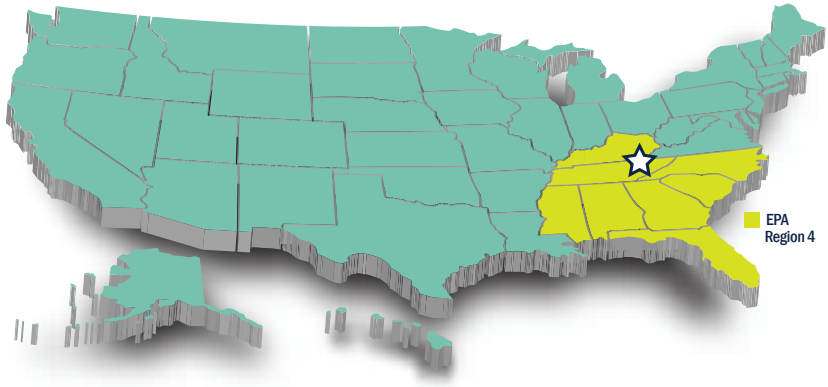
Leader in Superfund Cleanup

OREM is setting the pace for environmental cleanup across the 175 federal facilities in the Superfund program.

From fiscal years 2018 to 2022, OREM accounted for

» 13% of all completed federal facility remedial actions in the U.S.

» 40% of all completed actions in EPA's Region 4, which includes Tennessee, Alabama, Florida, Georgia, Kentucky, North Carolina and South Carolina



DOE Oak Ridge Environmental Management Program

Environmental Laws and Regulations

CERCLA

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Over five years, $1.6 billion was collected, and the tax went to a trust fund for cleaning up abandoned or uncontrolled hazardous waste sites.

CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified.

The law authorizes two kinds of response actions:

- Short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response.
- Long-term remedial actions, which permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening. These actions can be conducted at sites listed on the Environmental Protection Agency's (EPA's) National Priorities List, a listing of the nation's most hazardous waste sites.

CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the National Priorities List. In December 1989, EPA added the Oak Ridge Reservation site to the National Priorities List.

Superfund Records of Decision

Under the CERCLA process, a Record of Decision (ROD) formally documents the selection of a preferred cleanup method at Superfund sites.

Before a final cleanup decision is reached, a series of steps are followed. The pre-remedial stage involves identifying, and investigating areas to be addressed at the National Priorities List site. The site is then divided into operable units (the scoping boundary of a remedial response taken as one part of the site cleanup). The designated lead agency then performs a Remedial Investigation/Feasibility Study (RI/FS) and develops a preferred alternative for cleaning up an operable unit.

The preferred alternative is presented to the public for comment in a Proposed Plan, which briefly summarizes the alternatives studied in the RI/FS and identifies the preferred alternative. It also provides an evaluation of the alternatives against the following CERCLA-specified criteria: overall protection of human health and the environment; compliance with applicable requirements; short-term and long-term effectiveness; reduction of toxicity, mobility, or volume of contamination; implementability; cost; state acceptance; and community acceptance.

The Oak Ridge Reservation was added to the National Priorities List in 1989, identifying it to be cleaned up under the provisions of CERCLA.

The Environmental Protection Agency, the state, and the lead agency select a remedy and document it in a ROD after receiving comments from the public.

Removal Actions

Some cleanup activities on the Oak Ridge Reservation are conducted as Removal Actions under CERCLA. These actions provide an important method for moving sites more quickly through the CERCLA process.

Removal Actions are common at Superfund sites when the contamination poses an immediate threat to human health and the environment. Removals are classified as emergency time-critical or non-time-critical depending on the extent and type of contamination.

Generally, when a site presents a relatively time-sensitive, non-complex problem that can and should be addressed, a removal action would be warranted. However, even expensive and complex response actions may be candidates for removal action if they are time-sensitive. To determine if a removal action is war-

ranted, a determination must be made, preferably in an Engineering Evaluation/Cost Analysis (EE/CA), that there is a release or threat of release of a hazardous substance or pollutant into the environment.

An EE/CA is required for non-time-critical removal actions. The EE/CA explains the basis for the decision to employ a non-time-critical removal action as opposed to initiating a more complex RI/FS. It will detail cost, complexity, comprehensiveness, and time sensitivity of the proposed action. The EE/CA and all other documentation associated with the Removal Action are kept in the Administrative Record File, which is publicly available.

Administrative Record File

Both CERCLA and the NCP require the Department of Energy (DOE) to create and maintain an Administrative Record for each response action (remedial or removal) on the Oak Ridge Reservation. The Administrative Record is the official body of documents that form the basis for the selection of a particular response action. A n Administrative Record is developed for each project in which a ROD or Action Memorandum will be generated. The Administrative Record is closed with the signing of these documents.

The Administrative Record File serves two primary purposes. First, judicial review is limited to the contents of the Administrative Record in questions concerning the adequacy of the response that was selected. (Judicial review could include documentation outside of the Administrative Record if the record is deemed not to be complete or of appropriate quality.)

Second, the Administrative Record acts as a vehicle for and record of public participation in the response selection process. The Administrative Record files for the Oak Ridge Reservation are housed at the DOE Information Center, 475 Oak Ridge Turnpike, Oak Ridge, Tenn.

Federal Facility Agreement

Cleanup activities on or near the Oak Ridge Reservation are being performed in accordance with relevant state and federal laws, requiring close interaction among EPA, the Tennessee Department of Environment and Conservation (TDEC), and DOE. The terms for this interaction have been defined in a Federal Facility Agreement, which is required by CERCLA.

The Agreement, implemented January 1, 1992, ensures that environmental requirements are met or exceeded and that cleanup is performed as quickly as possible. A key goal of the agreement is to identify individual cleanup steps that can be performed to manage, eliminate, or reduce contamination.

EPA and TDEC will review the effectiveness of the remedial actions on the Reservation no less than once every five years to ensure that human health and the environment continue to be protected. To facilitate this process, DOE produces an annual Remediation Effectiveness Report, which is sent to EPA and TDEC for approval. This document reports the results of the monitoring performed on the Oak Ridge Reservation. This document is expanded every fifth year to satisfy the CERCLA five-year reporting requirement to evaluate the effectiveness of the cleanup activities.

Natural Resource Damage Assessment

CERCLA imposes responsible party liability for residual damages resulting from the injury, loss, or destruction of natural resources when environmental restoration activities incompletely correct such injuries because of release of CERCLA hazardous substances. CERCLA Section 107(f), Executive Order 12580, and NCP also authorize DOE, as a federal Natural Resource Trustee, to act in the public interest with regard to natural resources under its jurisdiction. When “residual damages” exist, a Trustee may perform a Natural Resource Damage Assessment (NRDA) to calculate monetary damages.

An NRDA is used to identify additional actions, beyond the initial cleanup response, to address injuries to natural resources. Examples include actions needed to restore the productivity of habitats or the species diversity that were injured by the past releases or to replace them with substitute resources. A Trustee may also seek compensation for the loss of injured natural resources from the time of injury until the time they are fully restored by assessing lost services. Regulations for assessing natural resource damage have been promulgated under both CERCLA and the Oil Pollution Act.

In the early 1990s, a DOE Oak Ridge Reservation Natural Resource Trustee Council was formed. The council is composed of representatives from DOE, the State of Tennessee, Tennessee Valley Authority, and U.S. Fish & Wildlife Service. A memorandum of understanding was written that established the roles and responsibilities of the council members. Once a Record of Decision was written for the Lower Watts Bar Reservoir, the council began to evaluate impacts to natural resources in the reservoir. In an attempt to compensate for damages to the reservoir, DOE and the State of Tennessee signed an Agreement in Principle in December 2002 to establish a conservation easement on 3,000 acres of land along Black Oak Ridge.

NEPA

The National Environmental Policy Act (NEPA), signed into law on January 1, 1970, established a national environmental policy and goals for the protection, maintenance, and enhancement of the environment. NEPA also provides a procedural process for implementing these goals within the federal agencies.

Environmental Laws and Regulations (continued)

NEPA's policies and goals are to

- consider the environmental consequences of proposed actions;
- act as an environmental trustee for future generations;
- ensure healthful, productive, and aesthetically and culturally pleasing surroundings;
- attain the widest possible range of beneficial uses of the environment without degradation or risk to health and safety;
- preserve historic and cultural heritage;
- achieve a balance between population and resource use; and
- enhance the quality of renewable resources and encourage recycling of depletable resources.

The Council on Environmental Quality, created to oversee NEPA, produces regulations that provide a procedural process for implementing these goals within federal agencies. CEQ was assigned the lead role in giving both structure and substance to the broad and very general mandates of the Act.

CEQ regulations were first issued in 1978 and required federal agencies to issue NEPA implementation procedures. The regulations place emphasis on informed decision-making based on understanding the environmental consequences of a proposed action. DOE's NEPA implementing regulations are found in 10 CFR 1021.

The first step in the NEPA process is scoping, the early and open process for determining the range of issues to be addressed and for identifying the significant issues related to a proposed action.

An action with no individual or cumulative significant effects on the quality of human environment is given a Categorical Exclusion. No Environmental Assessments or Environmental Impact Statements are required.

An Environmental Assessment determines whether an action would significantly affect the environment, and if so, an Environmental Impact Statement is prepared. If not, a "Finding of No Significant Impact" is issued.

For actions that significantly affect the environment, federal agencies are required to prepare Environmental Impact Statements, assessing the impact of, and alternatives to, the proposed action. A Notice of Intent is published in the *Federal Register* if an Environmental Impact Statement is planned.

In cases requiring an Environmental Impact Statement, DOE will prepare a concise public ROD stating that the decision is based on the Environmental Impact Statement. The ROD will state whether all practical means to avoid or minimize environmental harm from the alternatives selected have been adopted, and if not, why.

RCRA

The Resource Conservation and Recovery Act of 1976 (RCRA) addresses management of the country's huge volume of solid waste. The law requires that EPA regulate the management of hazardous waste, which includes waste solvents, batteries, and many other substances deemed potentially harmful to human health and the environment. RCRA also regulates underground tanks used to store petroleum and hazardous substances, recyclable used oil and batteries, mercury thermostats, selected pesticides, and fluorescent/hazardous light bulbs as universal wastes.

East Tennessee Technology Park, Oak Ridge National Laboratory, and the Y-12 National Security Complex are considered RCRA large-quantity generators. Each facility generates RCRA hazardous waste, some of which contains radionuclides.

The RCRA corrective action processes are similar to the CERCLA process and includes a RCRA facility assessment to identify releases needing further investigation; RCRA facility investigation, which characterizes the nature, extent, and rate of contaminant releases; a corrective measure study, which evaluates alternatives and details the remedy chosen; and corrective measure implementation. The RCRA process also includes public participation during the decision-making process.

Environmental Justice

Studies have shown that minority and low-income communities experience higher than average exposure to pollutants than the general population. In 1994, "environmental justice" was established as a national priority in the federal government through Executive Order 12898.

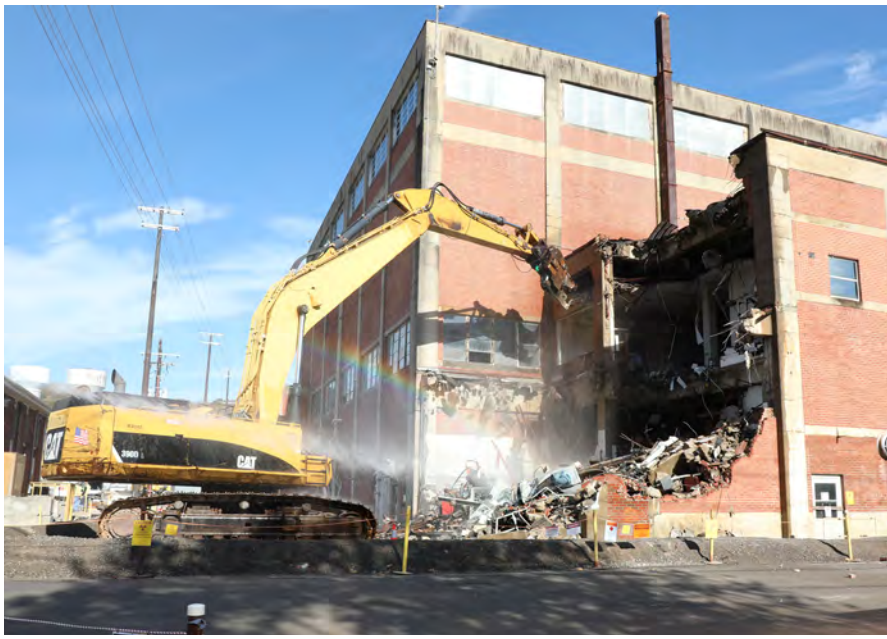
DOE is taking several steps to incorporate environmental justice into all decision-making processes. These steps include developing ways to lessen adverse human health or environmental effects to minority and disadvantaged populations, and determining and using, where possible, materials, technologies, and industry processes that are friendly to the environment.

Public participation is also an essential element in reaching environmental justice goals. DOE is making efforts to improve communications with minority and disadvantaged communities by scheduling more accessible public meetings, providing information in a timely and understandable manner, and involving the communities in all stages of cleanup decisions.

February 2025

OAK RIDGE SETS NATIONAL PACE FOR ENVIRONMENTAL CLEANUP

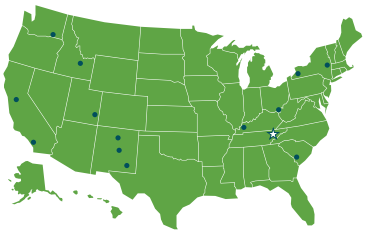
Oak Ridge Reservation | Oak Ridge, TN



Cleanup and Oversight

The U.S. Department of Energy's (DOE) Office of Environmental Management leads the world's largest environmental cleanup program. Its mission is to restore sites that supported government-funded weapons production and energy research. Today, 15 sites remain with active cleanup, and one of those sites is in Oak Ridge, Tennessee.

DOE's Oak Ridge Office of Environmental Management (OREM) and its contractor UCOR lead and perform cleanup in Oak Ridge, while the U.S. Environmental Protection Agency (EPA) and Tennessee Department of Environment and Conservation (EPA) provide regulatory oversight.



A Structure Designed for Results

In recent years, OREM helped establish a new regulatory partnership framework with EPA and TDEC that confronts issues that often cause delays, and it resulted in Oak Ridge maintaining its position as the top performing federal cleanup site in the nation. The framework is designed to aid decision-making and timely approvals.

Management representatives serve on a leadership team and an emerging issues team that help reach resolution on challenging issues. The framework also includes project management representatives who serve on a project team. These teams are:

- Fostering collaborative problem-solving at all levels
- Encouraging a "Get to yes" mindset
- Hosting monthly meetings to share real-time data results, discuss delays, and identify solutions

Decisions Leading to Action

Since implementing this approach, Oak Ridge's cleanup program has accomplished remarkable achievements. OREM and its regulators are approving key decision documents that allow important cleanup projects to advance across the Oak Ridge Reservation.

One of the most recent examples includes approval on a new disposal facility that provides the capacity needed to clean and transform the Y-12 National Security Complex and Oak Ridge National Laboratory. Approvals have also occurred on documents that provide guidance on groundwater remediation required for OREM to complete cleanup at the East Tennessee Technology Park.

An Unmatched Pace

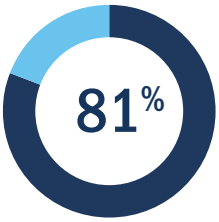
OREM and UCOR are conducting cleanup at a pace that is unmatched, not only within the DOE complex but across the Superfund program nationally. Since 2020, Oak Ridge has been responsible for a significant portion of starting and completing projects that are removing risks, enabling modernization at national security and science sites, and transferring cleaned land to the community to boost new economic growth.

Cleanup Leader Across DOE Sites

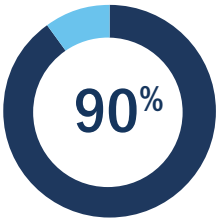
Oak Ridge has started and completed more cleanup tasks than any other DOE site

64% Started 64% of DOE's total remedial actions

61% Completed 61% of DOE's total remedial actions



soil remediation
413,379 cubic yards



debris removal
60,979 cubic yards

sediment remediation
1,278 cubic yards

Cleanup Leader Across EPA Superfund Sites

OREM is setting the pace for environmental cleanup across all the 175 federal facilities in the Superfund program.

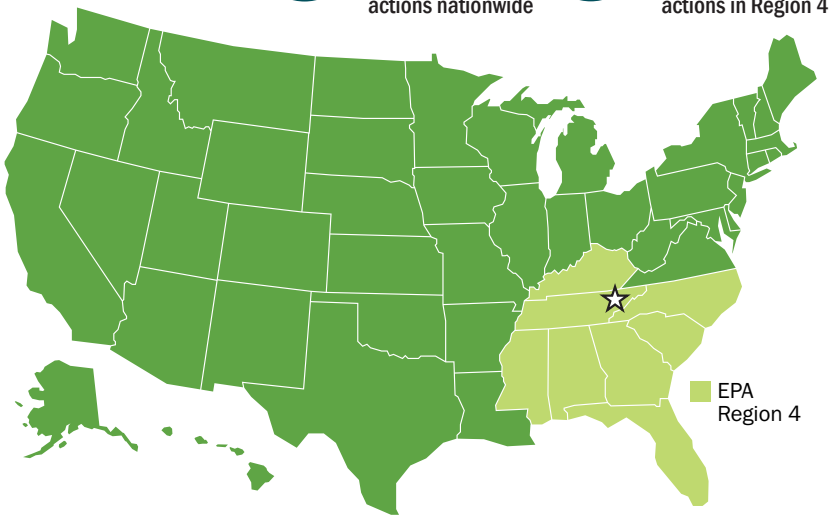
Since 2020, OREM accounted for

» 19% of all completed federal facility remedial actions in the U.S.

» 40% of all completed actions in EPA's Region 4, which includes Tennessee, Alabama, Florida, Georgia, Kentucky, North Carolina and South Carolina

19% of all completed actions nationwide

40% of all completed actions in Region 4



DOE Oak Ridge Environmental Management Program

History of the Oak Ridge EM Program

OREM
Oak Ridge Office of Environmental Management

1980

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) becomes law and provides broad federal authority to address potential releases of hazardous substances.

1985

- Uranium enrichment operations at the Oak Ridge K-25 Gaseous Diffusion Plant (now known as East Tennessee Technology Park) are halted.

1987

- The Oak Ridge K-25 Gaseous Diffusion Plant is permanently shut down.

1989

- DOE establishes the Office of Environmental Management (EM) to oversee the cleanup of hazardous materials at DOE facilities throughout the United States, including the Oak Ridge Reservation.
- The Oak Ridge Reservation is placed on the National Priorities List, identifying it to be cleaned up under the provisions of CERCLA.

1991

- The Toxic Substances Control Act (TSCA) Incinerator begins operation at the Oak Ridge K-25 Site. It is the only incinerator in the nation capable of incinerating wastes containing PCBs.

1992

- The Oak Ridge Reservation Federal Facility Agreement is enacted. It is a CERCLA-required cooperative agreement among DOE, the Environmental Protection Agency, and the Tennessee Department of Environment and Conservation to promote cooperation and participation of the three parties in cleaning up the Oak Ridge Reservation.

1993

- A Citizens Working Group is formed to provide feedback to DOE on potential remedial alternatives for the cleanup of Lower East Fork Poplar Creek, which would become one of the first major cleanup efforts in Oak Ridge. Public input into the remediation was the catalyst for modifying cleanup levels, resulting in less cost and less environmental disruption from excavation.

1995

- Records of Decision are issued for remediation of Lower East Fork Poplar Creek and Lower Watts Bar Reservoir.
- DOE establishes the Oak Ridge Site Specific Advisory Board (ORSSAB) under the Federal Advisory Committees Act. The ORSSAB is a federally appointed citizens panel that provides advice and recommendations to DOE's Environmental Management Program.

1996

- First lease of a K-25 Site facility is signed between the Community Reuse Organization of East Tennessee (a DOE leasing agent) and a private company. DOE's goal is to eventually convert the site into a self-sustaining private industrial park.

History of the Oak Ridge EM Program (continued)

1997

- ORSSAB sponsors public meeting that results in the formation of the End Use Working Group, a diverse group of stakeholders tasked with developing recommendations for end uses of contaminated sites.
- Lower East Fork Poplar Creek remediation is completed.
- Records of Decision are issued for removal of sludge from gunite tanks at Oak Ridge National Laboratory (ORNL), remediation of Surface Impoundments at ORNL, remediation of Clinch River/Poplar Creek, and remediation of Union Valley Groundwater Plumes.

1998

- Bechtel Jacobs Company LLC becomes the prime cleanup contractor for the Oak Ridge Reservation, replacing Lockheed Martin Energy Systems Inc.
- End Use Working Group issues two reports: *Final Report of the Oak Ridge Reservation End Use Working Group* and *The Oak Ridge Reservation Stakeholder Report on Stewardship.*

1999

- The ORSSAB forms the Stewardship Working Group to address issues associated with long-term stewardship on the Oak Ridge Reservation. The group produces *The Oak Ridge Reservation Stakeholder Report on Stewardship, Vol. 2.*
- The ORSSAB hosts the National Site Specific Advisory Board Meeting on Stewardship with members from nine DOE site SSABs attending.

2000

- Removal of radioactive sludge from a series of underground gunite tanks at ORNL is completed.
- Records of Decision are issued for the Melton Valley Watershed and Bear Creek Valley Watershed.

2001

- Ground is broken for the Environmental Management Waste Management Facility (EMWMF), an on-site CERCLA disposal cell that will handle contaminated waste generated from Oak Ridge Reservation cleanup. The facility would begin accepting waste in 2002.

2002

- DOE announces that the Oak Ridge Reservation will be cleaned up on an accelerated schedule, with high-risk areas to be addressed first. Areas covered in the Melton Valley Record of Decision are scheduled to be remediated by 2006, East Tennessee Technology Park by 2008, and the Balance of Reservation by 2015.
- The DOE Information Center opens, consolidating the services of the DOE EM Information Resource Center and the DOE Public Reading Room.
- Records of Decision are issued for Bethel Valley Watershed and Upper East Fork Poplar Creek sediments.

2003

- Bechtel Jacobs Company LLC is selected to implement DOE's accelerated cleanup plan.
- Transuranic Waste Processing Facility is constructed.
- All spent nuclear fuel is shipped from the Oak Ridge Reservation to various locations for safe disposal.
- Excavation of the K-1070-A Burial Ground at East Tennessee Technology Park (ETTP) is completed.
- Record of Decision is issued for ETTP Zone 1 soil remediation.

History of the Oak Ridge EM Program (continued)

2004

- Shipments begin of more than 6,000 depleted uranium hexafluoride cylinders from ETTP to Portsmouth, Ohio, for disposition.
- ETTP Scrap Waste Removal Project begins work on removing approximately 47,000 tons of scrap metal from the site.
- Cleanup of Atomic City Auto Parts is completed. The site was used as a coal distribution center by the Manhattan Project.
- Transuranic Waste Processing Facility begins operation.

2005

- Remediation of Blair Quarry is completed. The quarry was created in the early 1940s by excavating into McKinney Ridge. The rock material was used to support construction of the K-25 Site. It was later used for open burning of trash and debris.
- Numerous buildings at ETTP, including the former cafeteria (K-1002) and medical facility (K-1003), are demolished as part of the ETTP Decontamination and Decommissioning Project.
- Phase 1 of David Witherspoon Inc. 901 Site cleanup, which included building decontamination, demolition, and debris removal, is completed. The site previously received scrap radioactive and hazardous materials from federal operations in Oak Ridge.
- Construction begins on a haul road from ETTP to EMWMF so that wastes generated in the cleanup of ETTP can be shipped to the disposal facility without traveling on public roadways.
- Record of Decision is issued for cleanup of the Zone 2 portion of ETTP, which includes the area within the main fence of the plant.
- Expansion of EMWMF (Cells 3 and 4) is completed, adding 800,000 yds^3 of disposal capacity.
- Four office buildings totaling 200,000 ft^2 are transferred to Community Reuse Organization of East Tennessee (CROET).
- Bechtel Jacobs Company achieves the first major milestone of its Accelerated Cleanup contract with DOE: disposal of low-level and mixed legacy waste from the Oak Ridge Reservation.
- Site Specific Advisory Board celebrates 10-year anniversary.
- Building 3019 Project at ORNL is transferred to EM program.

2006

- The ETTP-to-EMWMF haul road opens.
- Building K-29, one of the large gaseous diffusion buildings, is demolished and debris removed.
- Melton Valley remediation is completed. Activities include cleanup and containment of various storage areas that accepted waste from ORNL operations. This achievement marks the successful completion of Bechtel Jacobs Company's second major Accelerated Cleanup milestone.
- Demolition of several facilities in the laboratory and main plant area of ETTP is completed as part of the ETTP Decontamination and Decommissioning Project.
- Project personnel completes shipment off-site of the last of the 6,000 depleted uranium hexafluoride cylinders located at ETTP.
- Site Specific Advisory Board receives national Citizens Excellence in Community Involvement Award.
- Two office buildings totalling 93,000 ft^2 are transferred to the CROET.

History of the Oak Ridge EM Program (continued)

2007

- Demolition of Building K-1401, a 500,000-square-foot former maintenance facility in the center of ETTP, is completed.
- Demolition of K-1320, an office building at ETTP, is completed.
- Demolition of the K-1501 ETTP Steam Plant facility is completed. The 2.5-year project, which involved 42,000 labor hours and more than 12 million pounds of waste shipped, concludes with no accidents.
- The haul road project, which connects ETTP to EMWMF, receives a Best in Class Pollution Prevention Award from DOE Headquarters Office of Environmental Management.
- Expansion of EMWMF (Cells 3 and 4) is completed, adding 800,000 yds^3 of disposal capacity.
- Parcels ED-5 and ED-7, totalling 23 acres, are transferred to CROET.

2008

- ETTP Fire Station is transferred to the City of Oak Ridge.
- The last of the nuclear fuel is removed from its storage tank at the Molten Salt Reactor Experiment.
- Field work at the Witherspoon 1630 Site in South Knoxville is completed.
- Demolition of Building K-1401, a former maintenance facility at ETTP, is completed.
- Demolition of the K-25 Building west wing begins.

2009

- $755 million is provided to DOE Oak Ridge Office for cleanup projects under the American Recovery and Reinvestment Act.
- The TSCA Incinerator is shut down, completing 18 years of service in which 35 million pounds of wastes were treated.
- Demolition of Building K-1035, a 48,000 ft^2 former instrument shop, is completed.
- Recontouring and restoration activities are initiated for three contaminated ETTP ponds.
- CROET begins construction of two “spec” buildings at ETTP for prospective private tenants.

2010

- Demolition of the K-25 Building west wing is completed and demolition debris is removed.
- Tie line isolation of the K-33 Building is completed in preparation for demolition.
- Various streets at ETTP are transferred to the City of Oak Ridge and renamed.

History of the Oak Ridge EM Program (continued)

2011

- Demolition of the K-25 Building's east wing begins.
- URS | CH2M Oak Ridge LLC (UCOR) becomes the prime cleanup contractor for the DOE Oak Ridge Reservation, replacing Bechtel Jacobs Company.
- Reindustrialization Program leases 282 acres to the Community Reuse Organization of East Tennessee as part of DOE's effort to convert ETTP into a private sector industrial park. Recontouring and restoration activities are initiated for three contaminated ETTP ponds.
- Demolition is completed on the K-33 Building at ETTP.
- Cleanup of the Old Salvage Yard at the Y-12 Complex is completed.

2012

- Demolition of the K-25 Building's east wing is completed, with the exception of a small portion on the southernmost end that is contaminated with technetium-99.
- Demolition begins on the K-25 Building's north end.
- Tank W-1A, the main source of groundwater contamination at ORNL, is removed.
- Mercury reduction efforts begin at the Y-12 Complex.
- Removal of legacy materials from Isotope Row at ORNL is completed.
- Cask Processing Enclosure is completed at the Transuranic Waste Processing Center.

2013

- Demolition of the K-25 Building's north end is completed.
- A second solar array, constructed by Vis Solis LLC on CROET property, is constructed at ETTP.
- Six NaF traps, the highest risk components still remaining, are removed from the K-27 Building.
- The conceptual design of the water mercury treatment facility at Y-12 is completed.

2014

- Demolition of the K-25 Building completed.
- Demolition begins on the K-31 Building.
- More than 3,500 cubic meters of legacy wastes disposed.
- Roof repairs completed on Alpha 4 building at Y-12.

History of the Oak Ridge EM Program (continued)

2015

- New 1 megawatt solar array opens at ETTP under a partnership between Restoration Services Inc. and Vis Solis Inc.
- DOE submits a revised draft of the Remedial Investigation/Feasibility Study for a proposed new CERCLA landfill that will supplement the existing waste repository.
- Demolition of the K-31 Building completed.
- Radioactive components removed from Building 3042 at ORNL, a former reactor research facility.

2016

- Demolition of the K-27 Building completed.
- Preliminary design completed for the Outfall 200 Mercury Treatment Facility.
- EMWMF logs its 14th year without a lost workday away case.
- Process pipe removal begins at Alpha -4 Building at the Y-12 Complex.

2017

- Crews begin cleaning Alpha 4 COLEX equipment at Y-12 for demolition and removal.
- Risk reduction work conducted at ORNL's Building 3026 and Building 7500.
- Half of ORNL's Uranium-233 inventory disposed through Direct Disposition Campaign.
- Demolition of Buildings K-731, K-732, K-832, K-832-H, K-1203 completed at ETTP.
- Shipments of transuranic waste resume to WIPP for permanent disposal.
- Groundbreaking begins for Mercury Treatment Facility at Y-12.

2018

- Demolition of two high-risk Biology Complex facilities (Building 9743-2 and 9770-2) completed at Y-12.
- Demolition of the Central Neutralization Facility completed at ETTP.
- Demoltion of the TSCA Incinerator completed at ETTP.
- Demolition of K-633 Test Loop Facility completed at ETTP.
- Mercury removal completed at Y-12's Alpha 4 west end COLEX facilities.

History of the Oak Ridge EM Program (continued)

2019

- Demolition of the K-1037 building completed at ETTP.
- K-29 building slab removed.
- Demolition underway on final two process buildings in the Poplar Creek area of ETTP.
- Construction begins on K-25 History Center.
- Processing begins on low-dose inventory of U-233 using gloveboxes
- Construction begins on the Outfall 200 Mercury Treatment Facility at Y-12

2020

- Completed demolition on the K-1200 Centrifuge Complex at ETTP
- Completed demolition on K-1600 at ETTP
- Finished all demolition at ETTP, achieving Vision 2020 and becoming world's first site to remove a former uranium enrichment complex
- Began demolition on Building 9210 at Y-12's Biology Complex
- Opened the K-25 History Center

2021

- Completed final demolition in Y-12's Biology Complex, Building 9207
- Completed processing low-dose inventory of U-233
- Demolished Radiological Development Lab's West Cell Bank at ORNL
- Demolished the Tritium Target Preparation Facility at ORNL

History of the Oak Ridge EM Program (continued)

2022

- Began processing high-dose inventory of U-233 using hot cells
- Awarded United Cleanup Oak Ridge (UCOR) 10-year Oak Ridge Reservation Cleanup Contract
- Completed demolition on the Bulk Shielding Reactor at ORNL
- Completed demolition on the Criticality Experiment Laboratory at Y-12
- Finished construction of the Sludge Processing Mock Test Facility
- Signed the final Record of Decision for the Environmental Management Disposal Facility

2023

- Completed demolition on the Low Intensity Test Reactor at ORNL
- Began early site prep for the Environmental Management Disposal Facility
- Transferred 376-acre former Powerhouse Area for economic development at ETTP
- Broke ground on the K-25 Viewing Platform

2024

- Completed soil remediation at ETTP
- Signed the K-31/K-33 Groundwater Record of Decision
- Signed the ETTP Main Plant Groundwater Interim Record of Decision
- Began demolition on the Alpha-2 Building at Y-12
- Signed a $42 million agreement with the state of Tennessee to complete the Natural Resource Damage Assessment process for impacts from DOE's historic operations on the Oak Ridge Reservation
- Transferred ORNL's largest source of legacy radioactive material, the Byproduct Utilization Program (BUP) 500-watt radioisotope thermoelectric generator (RTG), for beneficial reuse by Zeno Power

EAST TENNESSEE TECHNOLOGY PARK

OREM
Oak Ridge Office of Environmental Management

FACT: The 2,200-acre East Tennessee Technology Park (ETTP) operated Manhattan Project and Cold War-era uranium enrichment facilities for more than 40 years. The site, which began as a scientific marvel in 1943, became a legacy of contaminated buildings, soil, and groundwater after it was closed in 1987.

CHALLENGE: Restoring the environment required extensive cleanup and building demolition. Without the Oak Ridge environmental cleanup program, risks would remain that prevent new development and economic growth regionally.

SOLUTION: The Oak Ridge Office of Environmental Management (OREM) coordinates the safe and efficient cleanup of ETTP, preparing the land for redevelopment. As cleanup occurs, the land is transferred to the private sector with the ultimate goal of transforming the site into a thriving, privately-owned multi-use industrial park. OREM completed all building demolition in 2020. OREM completed soil remediation in 2024, and will implement any needed groundwater remedies in the years ahead.

OREM accomplishments at the East Tennessee Technology Park

More than
500 Facilities Demolished

1,700+ Acres
transferred for private sector use

3,000 Acres
placed in conservation easement

EAST TENNESSEE TECHNOLOGY PARK

Reindustrialization & Historic Preservation

OREM's goal for ETTP is to eliminate risks to human health and the environment, make clean land available for economic development, and preserve the international historical significance of the site.

PRESERVATION

An historic preservation agreement honors the 12,000 workers within the former K-25 complex (ETTP) who discovered the technological and scientific advancements that changed the course of the world during World War II and the Cold War. Under the agreement, OREM constructed and opened the K-25 History Center with more than 250 original artifacts, interactive exhibits, and access to nearly 1,000 oral histories from the site's early workers. The K-25 Interpretive Center opens this fall and will provide visitors of the Manhattan Project National Historical Park a sweeping, elevated, panoramic view of the K-25 building's 44-acre footprint to help visitors understand the size and scope of the site from a new perspective.

REINDUSTRIALIZATION

With soil remediation complete, OREM can complete the remaining land transfers to the community. The reindustrialization program works to transfer buildings and land to the private sector. The goal is to fully convert the site into a privately-owned multi-use industrial park. ETTP is currently home to energy companies, manufacturing, warehousing, and office space. ETTP boasts many offerings to potential industry searching for a new location including a well-maintained road system, railroad line, electrical transmission lines, emergency services, barge access, close proximity to two interstates, and utilities.

ETTP IS HOME TO 20 BUSINESSES, WITH MORE TO COME IN THE YEARS AHEAD

OREM has transferred more than 1,700 acres from federal ownership for economic development, and 900 additional acres are planned for transfer over the next three years. Those efforts have helped attract new businesses and industry that are investing billions of dollars and creating high-paying jobs.

Originally, ETTP began as an enrichment site that supported defense missions. Today, that history has come full circle with the site becoming the nation's hub for next generation nuclear companies that will advance carbon-free energy. Kairos Power is investing $100 million to build a demonstration reactor on the footprint of a former uranium enrichment facility, and Ultra Safe Nuclear Corporation has also located to ETTP.

Triso-X announced a plan to invest $400 million to build a nuclear fuel facility at the adjacent Horizon Center on former federal land, and the Tennessee Valley Authority has announced its plans to build a small modular reactor next to ETTP. Orano USA also announced plans to invest billions of dollars to construct a new enrichment facility near ETTP, which marks the largest investment in Tennessee's history.

Path forward

Work is underway to complete our cleanup mission at ETTP.

Zone 1 Groundwater Plumes

Seven source areas were identified for a future CERLCA decision based on historical and current groundwater conditions. The source areas have been investigated, and further investigation is being conducted for two of the source areas: the K-720 Fly Ash Pile, and the K-1085 Old Firehouse Burn Area. Additional characterization for these two areas, including additional groundwater monitoring and soil sample collection, is necessary prior to proceeding to the Remedial Investigation Report.

This report, followed by a Feasibility Study, will help in characterizing the nature and extent of contamination and risks to human health and the environment to pursue cleanup effectiveness for groundwater at the source areas. Following that documentation, the next steps include an approved Proposed Plan and Record of Decision, which would define the decisions and selected remedies made for each source area.

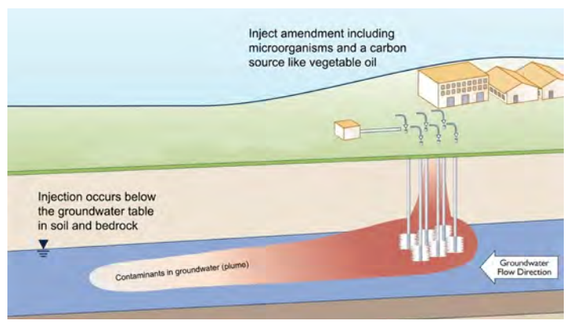
Remaining Media

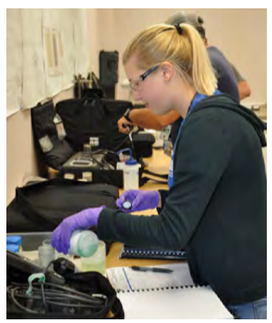
Surface water, sediment, and remaining ecological risks consists of media not addressed in previous or planned CERCLA decisions at ETTP. This project focuses on seven investigation areas where potential contamination and exposure to human and ecological receptors occur.

The risks are being investigated in two phases of scope. Phase 1 has been completed and included collection of new surface water and sediment from various locations. Phase 2 includes additional analytical and ecological data collection and is awaiting the finalized and approved Remedial Investigation Work Plan Sampling and Analysis Plan Addendum document.

Additional steps for this project include developing a Remedial Investigation Report and Feasibility Study Report that will characterize the nature and extent of contamination and risks to human health and the environment to pursue cleanup effectiveness for the contaminated Remaining Media. These will assist in the development of a Proposed Plan and Record of Decision that will define the decisions and selected remedies for remaining media.

All remedies listed will implemented as required by the Record of Decision in the future.





SOIL AND GROUNDWATER

East Tennessee Technology Park | Oak Ridge, TN

The Final Chapter of Cleanup at the East Tennessee Technology Park

February 2025

The Final Chapter

– Building demolished

DOE's Oak Ridge Office of Environmental Management (OREM) and its contractor UCOR have completed major field work at the East Tennessee Technology Park (ETTP). That involved demolition and soil remediation. In 2020, crews finished tearing down more than 500 facilities, including what was once the world's former largest building.

Following demolition, crews identified and removed areas with impacted soil at the site. That effort, which was completed in 2024, involved excavating more than 50,000 dump truck loads of soil.

The final chapter of cleanup at ETTP involves groundwater remediation. In 2024, regulators signed two Records of Decision that provide approved approaches for how to address impacted groundwater at the site, and it allows that work to begin.

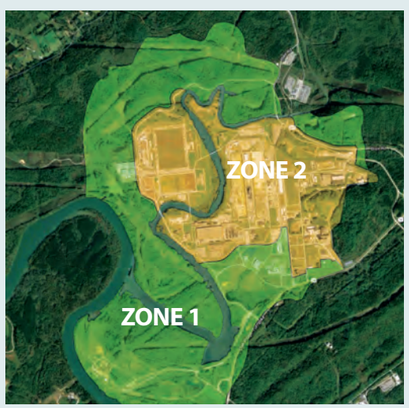
After decades of national service, ETTP's restored footprint is being returned to the community—emerging as a hub for new businesses, energy research, greenspaces, and the 409th National Historical Park.

Soils

For final soil cleanup at ETTP, crews characterized the soil to identify areas with contaminants, and then they worked to excavate and backfill those areas with clean fill.

In Summer 2020, DOE and its cleanup contractor, UCOR, completed removal of all contaminated soils in Zone 1 per the Zone 1 Interim Record of Decision (ROD). The Zone 1 Groundwater Plumes ROD will address the K-770 Fly Ash Pile (coal ash from power generation) and is the only area/action included in this ROD.

Work in Zone 2 was completed in Summer 2024. DOE and UCOR removed over 50,000 truck loads of contamined soil. This milestone marks completion of soil remediation across both zones.



The cleanup footprint is divided into two main areas.

- Zone 1 encompasses 1,400 acres bordering the site center
- Zone 2 includes an 800-acre footprint in the center of the site that housed the large uranium enrichment process buildings

Power of Partnerships

Working together, Federal Facility Agreement partners—the U.S. Department of Energy, the U.S. Environmental Protection Agency, and the Tennessee Department of Environment and Conservation—will achieve final cleanup of the East Tennessee Technology Park. Through a Regulatory Partnership Framework, FFA partners, along with cleanup contractor, UCOR, meet regularly to discuss issues impacting cleanup and courses of action to resolutions. This collaborative effort to restore ETTP protects people and the environment and makes land available for beneficial reuse.

CLEANUP PRIORITIES FOR THE OAK RIDGE NATIONAL LABORATORY

OREM
Oak Ridge Office of Environmental Management

FACT: Oak Ridge National Laboratory (ORNL) is the largest science and energy national laboratory in the Department of Energy (DOE) system, performing research to find solutions to some of our country's most compelling energy and security problems. The site was first established to produce and separate plutonium for the Manhattan Project. These efforts, and other research over the decades, helped protect and advance our nation but resulted in contamination of ORNL's facilities and the environment.

CHALLENGE: Amid ORNL's modern facilities are a number of inactive, deteriorating, and contaminated buildings and stockpiles of legacy waste that pose potential risks to human health and the environment. They are costly to maintain in a safe and stable condition. The Oak Ridge Office of Environmental Management (OREM) must conduct cleanup and remediation activities while minimizing impacts to ongoing research missions at ORNL.

SOLUTION: OREM is coordinating the safe and efficient cleanup of the ORNL site, including building demolition, waste treatment and disposal, and soil and water remediation. This work eliminates risks, and it clears land for ORNL to conduct future research missions that can usher in the next big discovery.

CLEANUP GOALS

Completing cleanup efforts at ORNL will protect human health and the environment, reduce facility and maintenance costs, and modernize one of DOE's most valuable assets.

Treat, remove, and dispose of legacy materials and waste

Demolish more than 200 excess facilities (30+ are high risk)

Remediate contaminated soil, water, and infrastructure

Modernize ORNL to enable future science and energy missions

U.S. DEPARTMENT of ENERGY

ENERGY.GOV/OREM

January 2025

CLEANUP PRIORITIES FOR THE OAK RIDGE NATIONAL LABORATORY

CLEANUP PROJECTS

FACILITY DECOMMISSIONING AND DEMOLITION (D&D)

OREM will tear down more than 200 structures at ORNL over the coming decades, including more than 30 that are categorized as high risk. These projects will enhance safety, modernize the site, and open land for future research missions.

ADDRESSING EXCESS CONTAMINATED FACILITIES

Major cleanup operations are underway to transform ORNL's central campus area. It is the oldest area at ORNL and houses many of the original structures built in the 1940s–1960s, including former research reactors and isotope production labs. Crews are already making visible impacts at the site. They have removed two former reactor facilities in the heart of ORNL, and they are actively preparing a dozen more facilities for demolition, including the Graphite Reactor support facilities, Isotope Row facilities, Oak Ridge Research Reactor, and the final Building 3026 hot cell. Together, these projects are paving the way for the next wave of demolitions that will remove risks, transform the campus, and clear land for research missions at DOE's largest multi-program national laboratory.

REMOVING INVENTORY OF HIGHLY-ENRICHED FISSLE MATERIAL

OREM has removed more than half of the inventory of uranium-233 stored in ORNL's Building 3019, which is the oldest operating nuclear facility in the world. This project is our highest cleanup priority at ORNL. The remaining material requires processing and downblending to convert it into a disposal-ready form, and that work is underway.

OREM completed the direct disposition campaign in 2017, which identified items that could support ongoing missions and disposing other containers as waste. From 2019–2021, employees downblended an inventory of low-dose material in gloveboxes for disposal. In 2022, employees began processing the high-dose inventory in hot cells for disposal, and that work will continue through the late 2020s. Through a partnership with TerraPower, employees are also extracting rare medical isotopes during processing operations that are supporting next generation cancer treatment research and active clinical trials.

Uranium-233 Disposition Project

Background

The Uranium-233 Disposition Project is the Oak Ridge Office of Environmental Management's (OREM) highest priority project at the Oak Ridge National Laboratory (ORNL). Isotek Systems is OREM's contractor responsible for leading the project. Originally created in the 1950s and 1960s for potential use in reactors, uranium (U)-233 proved to be an unviable fuel source.

Eliminating the inventory of U-233 at ORNL is urgent because it is highly enriched fissile material stored in the world's oldest operating nuclear facility. This material presents risks and is costly to keep safe and secure.

A Two-Phase Approach: Direct Disposition and Processing

This project involves the disposition of nearly 1,100 canisters of fissile material. Approximately half of the inventory was in a form that could be transferred to other U.S. Department of Energy programs for reuse or immediately shipped and disposed off site, while the remainder of the inventory requires processing to convert it into a form that is safe for transportation and disposal off site.

Direct Disposition Campaign

OREM and Isotek conducted the first phase of the U-233 Disposition Project – the Direct Disposition Campaign – from 2011 until 2017. That work was completed 10 months ahead of schedule, saving approximately $9 million.

Processing Campaign

Isotek began the Processing Campaign in 2019, and that work is expected to continue through 2028. The material addressed in this phase varies greatly. Employees began processing the lower-dose material in shielded gloveboxes in 2019 and initiated processing of the higher-dose material in hot cells in 2022. As Isotek progresses through the remaining inventory, the contents of the canisters will present more challenges, such as a higher radiation dose or more difficulty in opening the canisters.

About the remaining inventory

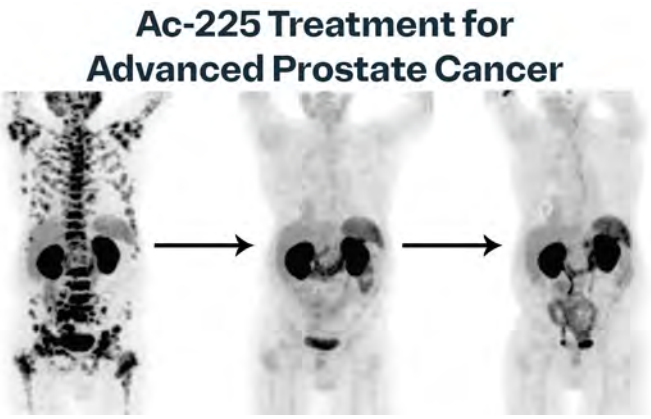
The remaining canisters are very diverse in form and packaging. Together, they were packaged by 13 sites in the last 30-50 years, and they have 59 different packaging configurations.

From Cleanup to a Cure: How U-233 is Advancing Cancer Treatment Research

In 2018, OREM and Isotek entered an innovative public-private partnership agreement with TerraPower that is providing extremely rare isotopes to support next generation cancer treatment research. That agreement allows Isotek to extract thorium-229 from the U-233 material before it's processed and disposed of. The

thorium-229 is shipped to TerraPower where employees extract actinium-225, a medical isotope critical to a promising form of cancer treatment called targeted alpha therapy. Currently, this is the only source and means for obtaining actinium-225 in the world.

Actinium-225 is hundreds of times more potent than any other radioisotope available, giving it the power to kill cancer cells much more efficiently. In treatments, actinium-225 is attached to a molecule to selectively target and deliver the radionuclide to the cancer site, destroying the cancerous tissue with minimal damage to nearby healthy cells.



In 2024, TerraPower announced it distributed the first samples of actinium-225 to two pharmaceutical companies to support the development of the revolutionary cancer treatment and, later that year, the company announced it was producing the material at a commercial scale to support clinical trials across the globe. It will be used in drug trials for diseases such as breast, prostate, colon, and neuroendocrine cancers, melanoma, and lymphoma.

Once all thorium-229 has been extracted from the U-233 inventory over the next three years — an estimated 40 grams — 100 times more doses of this next-generation cancer treatment will be available annually than are currently available worldwide.

U-233 Disposition Project Breakdown

Direct Disposition Campaign

- **140 Containers** COMPLETE — *Transfer containers suitable for programmatic reuse to users*
- **402 Canisters** COMPLETE — *Ship and dispose Consolidated Edison Uranium Solidification Project (CEUSP) material*

Processing Campaign

- **27 Canisters** COMPLETE — *Use gloveboxes in Building 2026 for processing*
- **480 Canisters (2022-2028)** — *Use hot cells in Building 2026 for processing and downblending*

Extracting thorium-229 from U-233 prior to processing and disposal

Global demand for actinium-225 is expected to increase as more treatments are developed, making the work performed by OREM and Isotek more vital and impactful.

CLEANUP PRIORITIES FOR THE Y-12 NATIONAL SECURITY COMPLEX

OREM
Oak Ridge Office of Environmental Management

FACT: Y-12 National Security Complex (Y-12) plays a key role in strengthening our country's national security by retrieving and storing nuclear materials, fueling the country's naval reactors, and reducing global threats. Formerly, Y-12 operated uranium enrichment and lithium separation facilities during the Manhattan Project and Cold War–era that protected our country but resulted in contamination of its facilities and the environment.

CHALLENGE: Contaminated and deteriorating facilities on the Y-12 site pose potential risks to employees and the environment, and they are costly to maintain. The Oak Ridge Office of Environmental Management (OREM) must conduct large-scale cleanup and remediation activities while minimizing impacts to ongoing national security missions at Y-12.

SOLUTION: OREM is coordinating the safe and efficient cleanup of the Y-12 site — including building demolition and soil and water remediation. This enables Y-12 to continue its national defense missions, modernize its footprint, and create a safer environment for employees and the community.

CLEANUP GOALS

Completing cleanup efforts at Y-12 will protect human health and the environment, reduce facility and maintenance costs, and support future missions.

Remove and dispose of legacy materials and waste

Demolish more than 80 excess facilities (25+ are high risk)

Address mercury in the soil and water

Modernize Y-12's footprint

U.S. DEPARTMENT of ENERGY

ENERGY.GOV/OREM

January 2025

CLEANUP PRIORITIES FOR THE Y-12 NATIONAL SECURITY COMPLEX

CLEANUP PROJECTS

FACILITY DECOMMISSIONING AND DEMOLITION (D&D)

OREM will remove nearly 80 structures at Y-12 in the decades ahead, including more than 25 that are categorized as high risk. Three buildings will be deactivated and kept for historical preservation, while the remaining buildings will be demolished to remove risks, enable modernization, and open land for important missions.

ADDRESSING EXCESS CONTAMINATED FACILITIES

OREM is setting the stage for the next wave of demolitions with several deactivation projects at Y-12. The next big demolition projects involve removing two Manhattan Project-era enrichment facilities, Alpha-2 and Beta-1, that have a combined footprint of more than half a million square feet. Once two crucial infrastructure projects are completed – the Mercury Treatment Facility construction project and West End Protected Area Reduction project – OREM will be able to address the largest and highest risk structures at Y-12. Those facilities include Alpha-4, Alpha-5, and Beta-4. Crews have conducted projects to retrieve mercury and deactivate old equipment outside of Alpha-4 to prepare it for future cleanup. Those efforts captured nearly 15,000 pounds of mercury and prevented a large release into the environment.

WATER TREATMENT

Construction of the Outfall 200 Mercury Treatment Facility is underway and moving forward. This vital piece of infrastructure is the linchpin for OREM's cleanup strategy at Y-12. It is designed to safeguard against mercury releases in the Upper East Fork Poplar Creek during demolition of Y-12's large, deteriorated, mercury-contaminated facilities and subsequent soil remediation. When operational, the facility will be able to treat up to 3,000 gallons of water per minute and help the site meet regulatory limits in compliance with Environmental Protection Agency and State of Tennessee requirements.

CHANGING THE LANDSCAPE

OREM's demolition projects are altering Y-12's skyline, removing hazards, and enabling modernization. In 2021, OREM finished removing the 11 structures that comprised the Biology Complex. That project cleared away vacant, deteriorating buildings and opened 18 acres for National Nuclear Security Administration to construct its new Lithium Processing Facility. In 2022, crews tore down the former Criticality Experiment Laboratory, another high-risk excess contaminated facility.

Now, teams are tearing down Alpha-2. This marks the largest demolition to date at Y-12 and the first project to remove a former uranium enrichment facility. The massive Manhattan Project-era structure stands three stories tall and covers a 2.5-acre footprint. Deactivation is also underway at Beta-1 – another Manhattan Project-era enrichment facility – and demolition is expected to begin on that facility in 2026.

ENVIRONMENTAL MANAGEMENT DISPOSAL FACILITY

OREM
Oak Ridge Office of Environmental Management

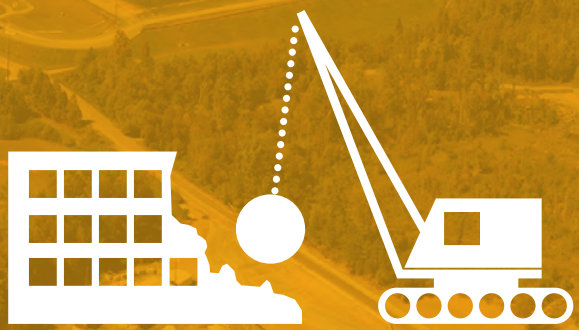
FACT: The existing on-site disposal facility is at 85% capacity. The Oak Ridge Office of Environmental Management (OREM) requires additional disposal capacity to complete its critical cleanup projects at the Y-12 National Security Complex (Y-12) and Oak Ridge National Laboratory (ORNL).

CHALLENGE: OREM needs a new disposal facility to maintain its progress at Y-12 and ORNL. Cleanup projects at those sites will generate a significant amount of debris and soil that requires disposal.

SOLUTION: The construction and availability of a second on-site disposal facility will allow OREM to continue its important cleanup efforts without delays. It provides vital capacity and avoids significant costs and time associated with shipping waste across the country.

This disposal facility allows OREM to:

- **Remove aging excess facilities at Y-12 and ORNL, making way for site modernization and future missions.**
- **Direct resources toward more projects that target and address Oak Ridge's greatest remaining environmental risks.**



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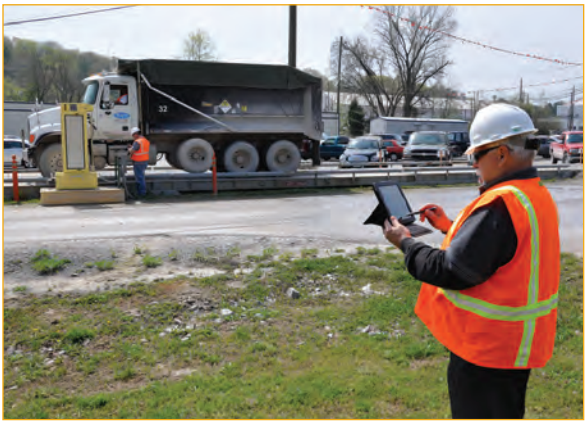
ENVIRONMENTAL MANAGEMENT DISPOSAL FACILITY



PROVEN SAFETY RECORD

Safety is always OREM's top priority. The program has extensive experience safely constructing and operating disposal sites. Since 2002, OREM has operated the current disposal facility in Oak Ridge without impacting local residents or human health, and it has a proven track record dispositioning waste from large-scale cleanup on the Oak Ridge Reservation.

ADHERING TO STRICT WASTE ACCEPTANCE CRITERIA

The new disposal facility will only accept low-level waste—which is mainly comprised of demolition debris, equipment, and soil from cleanup. The highly contaminated waste, soil, and equipment, that accounts for more than 90% of the contamination levels, will be shipped and disposed of off site.

BENEFITTING THE REGION

Completing cleanup activities at the Y-12 and ORNL will remove environmental risks and support the missions of two of the region's largest employers. The second disposal facility will allow OREM's cleanup mission to continue without delay—keeping a highly trained and qualified workforce active on cleanup projects and supporting cleanup and modernization for both sites to remain at the forefront of their respective fields.

PROJECT STATUS

OREM and its regulators signed the Record of Decision for EMDF in September 2022, and crews have made tremendous progress since that time. The project involves three phases: (1) early site preparation; (2) groundwater field demonstration study; and (3) balance of construction.

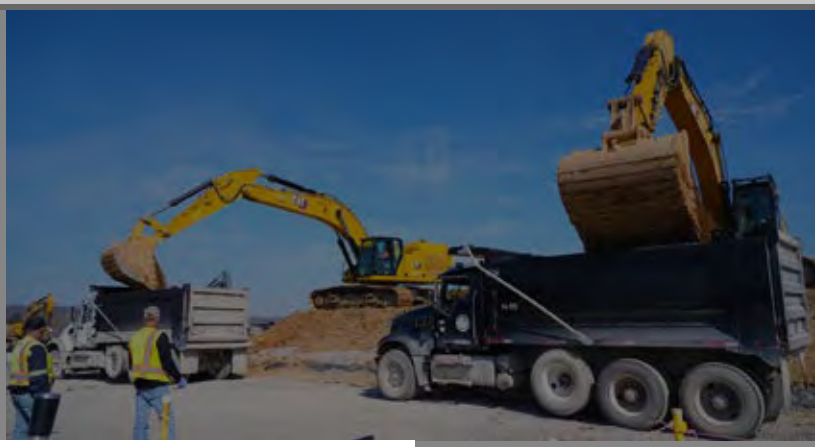
In 2024, employees completed early site preparation five months ahead of schedule and $12.3 million under budget, and they also completed field work for the groundwater field demonstration.

Field work for the second phase involved clearing and recontouring more than 30 acres of land and installing a geosynthetic cover system. The 1.3 million-square-foot geomembrane layer simulates the effect of lined disposal cells on groundwater elevations, creating an impermeable barrier over the site.

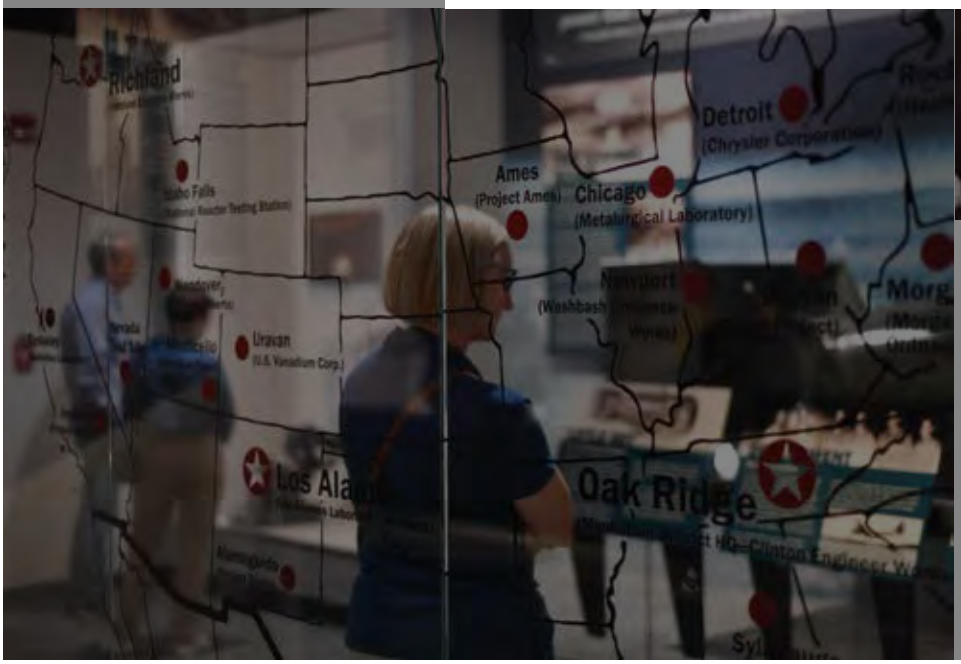
This work allows OREM to gather information about how groundwater elevations change, providing valuable information for the landfill's final design. Employees will monitor groundwater elevations over the next two wet seasons through 2026. That data will be used to inform the final design and enable the final phase of the project, which includes EMDF's construction.

EMDF is slated for completion in 2030.

Oak Ridge
Site Specific Advisory Board



2025 Annual Report



www.energy.gov/orssab
orssab@orem.doe.gov

The East Tennessee Technology Park in Oak Ridge, Tenn. was once a shuttered uranium enrichment complex. EM's cleanup has transformed the site into a multi-use industrial park for the community with private businesses, conservation areas, and a national park.

Contents

Our Mission

The Oak Ridge Site Specific Advisory Board (ORSSAB) is a federally appointed citizens' panel that provides independent recommendations to the Department of Energy's (DOE) Oak Ridge Environmental Management (OREM) Program.

The board provides advice to the DOE EM program regarding environmental restoration, waste management, long-term stewardship, land use, and economic development.

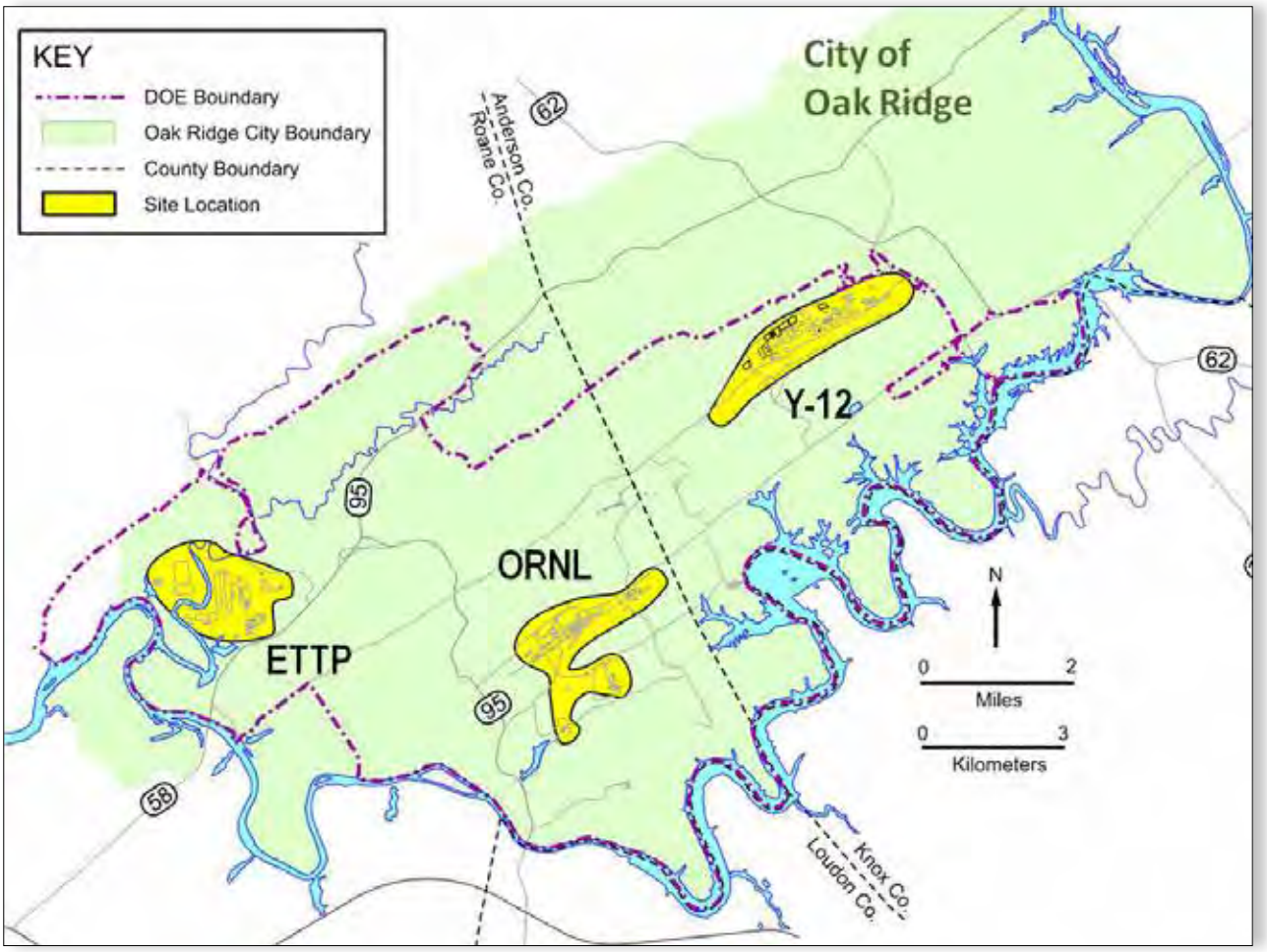
Recommendations regarding workforce, health and safety issues, historic preservation, and other concerns may also be developed at the request of the DOE assistant secretary for EM or the OREM manager. ORSSAB is one of eight site specific boards across the nation that comprise the EM SSAB and may also participate in joint recommendations with that organization.

The board is committed to reflecting the concerns of the communities impacted by EM activities on the Oak Ridge Reservation (ORR) and serving as a communications link between the public and relevant government agencies, including local governments.

ORSSAB provides several avenues for the public to learn about and express views on OREM's cleanup work. All board and committee meetings are open to the public and are announced in the Federal Register, on our website, and in various social media outlets.

Meetings are held at the DOE Information Center in Oak Ridge at 1 Science.gov Way and may also be attended virtually via Zoom on request. Recordings are uploaded to YouTube at **www.youtube.com/user/ORSSAB**.

The board maintains a web site at **www.energy.gov/orssab**. Information is also available by calling the ORSSAB support office at 865-241-4583 or 865-241-4584 or email us at **orssab@orem.doe.gov**.



Unlike most other DOE facilities, the ORR is almost entirely within the city limits of Oak Ridge. It contains three main facilities: East Tennessee Technology Park, Oak Ridge National Laboratory, and the Y-12 National Security Complex.

ORSSAB was chartered under the Federal Advisory Committee Act in 1995. The board is composed of up to 22 members, chosen to reflect the communities near the ORR. Members are appointed by DOE and serve without compensation. Members may serve up to three two-year terms.

During 2025, the board consisted of 22 voting members from Anderson, Campbell, Knox, Loudon, Morgan, and Roane counties. More about members who served, including some who exited the board mid-year, can be found in the "Members" section starting **on Page 12**.

Non-voting participants include liaisons from DOE, the U.S. Environmental Protection Agency Region 4 (EPA), and the Tennessee Department of Environment and Conservation (TDEC), which advise the board on their agencies' policies and views.

FY2025 Board Officers

ORSSAB officers for FY2025 were Amy Jones, chair; Kris Bartholomew, vice chair; and Harriett McCurdy, secretary. Harold Conner, Jr., and Charles Moore were co-chairs of the EM & Stewardship Committee.

Board Meetings

The board meets the second Wednesday of most months at 6 p.m. in Oak Ridge to hear presentations by EM personnel working on relevant projects, listen to and discuss input from concerned citizens, consider recommendations to DOE, and conduct other business. In August, an annual meeting was held to evaluate the board's work during the year and plan activities for the next year. For 2025, meetings were held as hybrid in-person and through Zoom.

The board conducts its deliberations under ORSSAB bylaws and Robert's Rules of Order and strives to consider all relevant positions in reaching decisions.

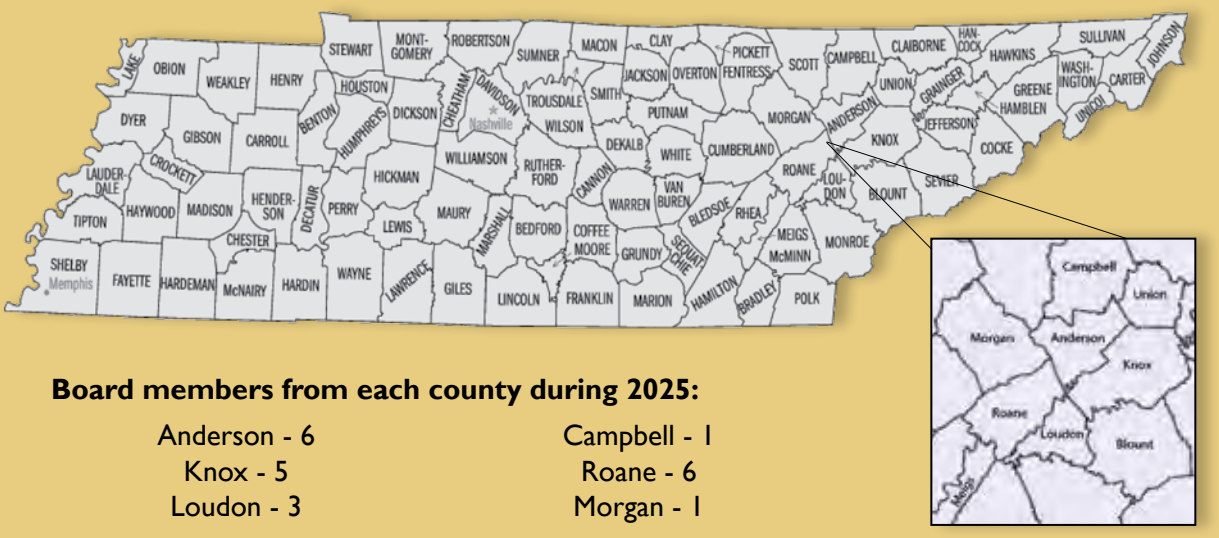
Committees

General business is handled at the monthly Executive Committee meeting, which is composed of the elected officers of the board and the chair of the EM & Stewardship Committee. This committee holds general administrative authority to set board agendas, coordinate the work of other committees, and transact business as necessary.

The EM & Stewardship Committee is responsible for monitoring the major cleanup activities on the ORR as well as stewardship requirements for areas of the reservation that have been remediated, but remain contaminated long-term. It originates recommendations to be considered at full board meetings. All board members are part of this committee.

Committees usually meet monthly, and all meetings are open to the public.

Representing nine counties in East Tennessee



Board members from each county during 2025:

Anderson - 6
Knox - 5
Loudon - 3
Campbell - 1
Roane - 6
Morgan - 1

Join the Board

~~A broad spectrum of backgrounds and viewpoints is desired for board membership; technical expertise is not required.~~ Applications for membership are accepted at any time and are actively solicited through a variety of media during specific recruitment periods.

Residents from the counties affected by DOE operations are encouraged to apply. These counties include Anderson, Blount, Campbell, Knox, Loudon, Meigs, Morgan, Roane, and Union.

To apply, please submit your resume, a short biography, and the following information: name, county of residence, phone number, email, and a short explanation of why you want to volunteer to serve on the board. Information can be emailed to orem.doe.gov, mailed to Oak Ridge SSAB, P.O. Box 4067, EM-94, Oak Ridge, TN 37831, or submitted in person at the DOE Information Center, 1 Science.gov Way, Oak Ridge.

Abbreviations

CAB	Citizens Advisory Board
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DDFO	Deputy Designated Federal Officer
DOE	U.S. Department of Energy
EM	Environmental Management
EMDF	Environmental Management Disposal Facility
EMWMF	Environmental Management Waste Management Facility
EPA	U.S. Environmental Protection Agency
ETTP	East Tennessee Technology Park
OREM	Oak Ridge Office of Environmental Management
ORNL	Oak Ridge National Laboratory
ORR	Oak Ridge Reservation
ORSSAB	Oak Ridge Site Specific Advisory Board
TDEC	Tennessee Department of Environment and Conservation
TRU	Transuranic
TWPC	Transuranic Waste Processing Center
WIPP	Waste Isolation Pilot Plant
Y-12	Y-12 National Security Complex

The Year's Top News

Fed, State Leaders Sign ROD on ETTP Soil Cleanup

From left, OREM Manager Erik Olds, EPA Regional Administrator Kevin McOmber and TDEC Commissioner David Salyers sign a record of decision on the completion of soil cleanup at a 1,400-acre portion of land at the East Tennessee Technology Park.

Federal and state leaders recently signed a record of decision confirming cleanup of soil is complete at a portion of ETTP, enabling the reuse of land for continuing economic development.

In his first visit to Oak Ridge, EPA Regional Administrator Kevin McOmber joined leaders from TDEC and OREM to sign the document.

The record confirms OREM has finished all necessary soil cleanup work for Zone 1 at ETTP. This accomplishment comes after EPA, TDEC and OREM signed two other records of decision last year focused on groundwater remediation at ETTP.

ETTP is formerly known as the K-25 Site or Oak Ridge Gaseous Diffusion Plant, which operated from the mid-1940s until 1985. The plant was originally used to enrich uranium as part of the Manhattan Project, but it continued operations after World War II to produce enriched uranium for defense missions and commercial power.

Zone 1 is a 1,400-acre area immediately surrounding the main plant area of ETTP. It includes a portion of land that previously housed electrical powerhouse facilities, a scrap yard and waste burial grounds. The soil, surface water and groundwater in this area was impacted by previous operations.

Part of that acreage also includes a natural resource management area that was created in 2006 through a partnership between OREM and the Tennessee Wildlife Resources Agency.

OREM and its contractor, UCOR, excavated the impacted soil in Zone 1 that could pose risks to human health or the environment. In total, crews removed 67,000 cubic yards of soil — enough to fill about 5,500 dump trucks. This cleanup enables reuse of land for economic development and improves the quality of the ecosystem to support animal habitats.

The state of Tennessee has worked closely with EPA, DOE and DOE's federal contractors to determine effective pathways to clean old Manhattan Project-era contamination, protect human health and prepare sites for new industrial use, according to TDEC Commissioner David Salyers.

Decades of cleanup by OREM and its contractors have transformed the former uranium enrichment complex into a multiuse industrial center, historical park and conservation area that benefit the community. ETTP is the recipient of EPA's 2024 National Federal Facility Excellence in Reuse Award.

To date, OREM has transferred more than 1,800 acres at ETTP for economic development. That land has attracted more than 25 businesses that have announced billions of dollars in capital investments, and more developments are expected in the years ahead.

-Contributor: Ryan Getsi

January

Mock-up Training Benefits High-Priority U-233 Disposition Project at ORNL

Inside a mock-up, Isotek employees practice the steps involved in replacing hot cell equipment.The mock-up features the exact dimensions of an actual hot cell.

How can employees safely perform repairs inside highly contaminated rooms used to process nuclear waste?

That was a question OREM contractor Isotek addressed through advanced training to help prepare and protect employees while also facilitating efficient operations to keep ORNL's highest priority cleanup project on track.

OREM and Isotek are working to eliminate the nation's inventory of uranium-233 (U-233) from storage at ORNL.

U-233 presents risks and is costly to keep safe and secure. Originally created in the 1950s and 1960s for potential use in reactors, it proved to be an unviable fuel source.

The remaining inventory of U-233 stored onsite requires processing to convert it into a form safe for shipment and permanent disposal. That work involves Isotek employees placing the material in heavily shielded rooms, called hot cells, and handling that material using mechanical arm manipulators.

Equipment used inside the hot cells degrades over time from wear and tear and from high radiological dose. To replace the equipment, workers must occasionally enter the hot cells.

Entries occur approximately five times a year — only when equipment inside the rooms cannot be fixed or replaced using the openings in the hot cells.

Isotek prepares employees for those entries by providing them opportunities to dress in personal protective equipment and practice tasks before performing them in high radiation areas. Radiological control, maintenance and engineering teams fabricated a mock-up hot cell offsite so key personnel could perform and perfect hot cell entry procedures before ever entering the hazard zone.

The mock-up was constructed to the exact measurements of a hot cell so workers can adapt to the dimensions of the limited space. Staff must learn to perform tasks with minimal contact with surfaces and equipment inside, which helps them avoid areas with high levels of contamination and reduce the likelihood of spreading contamination.

This training was especially timely because these rooms become more contaminated as crews process material from the inventory with increasingly higher levels of radiation.

Hot cell entries also provide an opportunity to make improvements to the processing system.

The hot cell mock-up practice has already paid off.

Recently, Isotek workers entered one of the hot cells and replaced all the processing equipment inside. The activity involved loosening and fastening hose lines, lifting and replacing ion-exchange columns stands, and the challenging process of communicating to personnel outside the hot cell using radios in their protective suits.

The hot cell entry was safe and successful with new and improved equipment installed to support future processing operations.

-Contributor: John Gray

February

Oak Ridge Restores Full Production Capabilities at Transuranic Waste Processing Facility

OREM and contractor UCOR successfully reestablished full production capacity at the Transuranic Waste Processing Center.

Recent repairs had teams at the facility working full speed again as they processed and repackaged waste for shipment and permanent disposal to the Waste Isolation Pilot Plant (WIPP) in New Mexico. Years of defense-related research conducted primarily at ORNL in decades past generated Oak Ridge's transuranic material.

A large, 900-pound waste-drum crusher at the center had broken. It plays a key role in waste processing operations, requiring teams to replace the equipment.

When drums arrive at the center for processing, employees empty them to access, process and repackage the waste for shipment and disposal. Once emptied, the drums are reduced in size and disposed of as well.

The mission of the crusher is to do exactly that: squash the empty drums. However, its outage presented multiple challenges.

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With the crusher out of commission, workers wore protective suits and manually cut and reduced the size of the old drums. While this approach kept work moving forward, it also presented more risks, took more time and was more labor intensive. The equipment's failure also impacted activities in the work area below the crusher.

Replacing the waste-drum crusher required entering a confined space. Safety, maintenance and waste operator teams planned and trained extensively before entering the room. The challenging work included conducting a critical lift, working from scaffolding and navigating tight clearance spaces on the replacement.

-Contributor: Chris Caldwell

Transuranic Waste Processing Center workers safely replaced the facility's 900-pound waste-drum crusher, restoring the center's full waste processing capabilities for an ongoing cellulosic waste campaign.

March

Secretary Wright Energized by Visit to Oak Ridge Cleanup Projects

During a visit to Oak Ridge, Energy Secretary Chris Wright observed cleanup projects that are helping modernize one of the nation's most important national security sites and opening land for next-generation nuclear companies.

Wright's visit with OREM began at the Y-12 National Security Complex, where he saw the crucial work underway to protect the nation. However, Y-12's ongoing missions are happening near many deteriorated, contaminated facilities dating to the Manhattan Project and Cold War.

Leadership from OREM and cleanup contractor UCOR detailed how OREM cleanup efforts are removing those structures to eliminate hazards and provide space for new infrastructure supporting national security missions.

Wright also gathered with congressional and business leaders at Oak Ridge's East Tennessee Technology Park (ETTP). The meeting highlighted OREM's efforts to return government-owned land it has cleaned back to the community to attract new economic development.

Energy Secretary Chris Wright was joined by U.S. Sen. Bill Hagerty, U.S. Rep. Chuck Fleischmann, Tennessee Department of Economic and Community Development Commissioner Stuart McWhorter, former Oak Ridge Office of Environmental Management Manager Jay Mullis, UCOR President and CEO Ken Rueter and others to discuss how transferred land at Oak Ridge's East Tennessee Technology Park is helping attract nuclear industry to the region.

Those transfers have been successful in bringing next-generation nuclear companies and significant private investments to Oak Ridge.

OREM completed major field work at ETTP in 2024, culminating more than 20 years of cleanup. Along the way, Oak Ridge became the first site in the world to remove a former enrichment complex, and the first DOE site to pursue reindustrialization.

OREM's cleanup and transfers have transformed ETTP from a government-owned, shuttered uranium enrichment complex into a privately owned industrial park that has become a hub for nuclear energy development.

-Contributor: Ben Williams

April

Oak Ridge Kicks Off New Processing Phase for U-233 Project

OREM and contractor Isotek began processing a new set of material as part of the U-233 Disposition Project.

Together, OREM and Isotek are eliminating the nation's inventory of U-233 from storage in the world's oldest operating nuclear facility, located at ORNL.

U-233 presents risks and is costly to keep safe and secure. Originally created in the 1950s and 1960s for potential use in reactors, it proved to be an unviable fuel source. Its removal is the highest priority cleanup project at ORNL.

Employees began processing material known as radiochemical processing (RCP)-06. It differs from portions of the inventory they've processed previously. The material

(Continued on page 7)

has also presented unique challenges, prompting years of preparation before treating it.

Previously, all material Isotek had processed using heavily shielded rooms called hot cells had been in the chemical compound form of oxide or a powder-like form. The RCP-06 material is in a 2-foot-long, solidified, ceramic cylinder.

Much of the preparation went into designing a cutting device that could divide the material into segments small enough to meet critical mass restrictions during processing. These limits enhance safety and reduce risks associated with fissile material by helping prevent potential reactions.

RCP-06 canisters contain U-233 that the Hanford Site in Washington and Savannah River Site in South Carolina sent to Oak Ridge in the 1970s. The material was originally in a liquid form, but it was solidified in the 1980s for safe long term storage. Oak Ridge was designated the location for U-233 storage.

Additionally, Isotek continues to extract extremely rare medical isotopes during processing operations for next generation cancer treatment research. These isotopes are key to a promising form of treatment that is showing success in clinical trials against types of cancer previously thought untreatable.

Currently, only one gram of those isotopes is available worldwide outside of Oak Ridge. However, through this project, Isotek is extracting an estimated 40 grams. That is enough to create 100 times more doses of treatments annually than is currently available worldwide.

-Contributor: John Gray

Radiochemical processing-06 material is removed from its storage container before it is divided into segments small enough to meet critical mass restrictions during processing.

May

Crews Begin Final Demolition Phase for Former Lab at ORNL

Demolition was underway on the last remaining hot cell structure at the former Radioisotope Development Laboratory at ORNL — a U.S. Department of Energy Office of Environmental Management priority for 2025.

OREM and contractor UCOR installed a six-story protective cover over the former Radioisotope Development Laboratory demolition project to ensure surrounding research missions at Oak Ridge National Laboratory are not impacted.

Removing the structure would complete demolition of the former laboratory, eliminate a significant risk, enable modernization at ORNL and open space to support ongoing research and science missions at the site.

Preparing this structure for teardown required years of planning and deactivation by OREM and cleanup contractor UCOR due to the levels of radioactivity inside.

Crews demolished the facility's outer structure and the other five hot cells in the former laboratory, known as Building 3026, in previous years.

The cells were heavily shielded concrete rooms that provided researchers protection from radioactive material as they conducted research. The laboratory was built in 1945 to support isotope separation and packaging and was later used to examine irradiated reactor fuel experiments and components.

The final hot cell was divided into subcells A and B. Crews demolished subcell B first. Next, workers used remotely operated equipment to assist with deactivating subcell A due to the high radioactivity there.

-Contributor: Carol Hendrycks

(Continued on page 8)

June

An aerial view of the Environmental Management Disposal Facility project footprint. Crews installed a 1.3 million-square-foot geomembrane layer that simulates the effect of lined disposal cells on groundwater elevations, creating an impermeable barrier over the site.

Oak Ridge Finishes First Groundwater Monitoring Phase for New Disposal Facility

OREM and contractor UCOR completed an essential step to prepare for construction of a new onsite disposal facility: groundwater monitoring during the first of two wet seasons.

The Environmental Management Disposal Facility (EMDF) will provide the waste disposal capacity needed to continue OREM's large scale cleanup projects at Y-12 and ORNL.

Monitoring groundwater levels is part of a groundwater field demonstration study. This work allows OREM and UCOR to gather information about how groundwater elevations change, providing valuable information for the landfill's final design.

Gathering data during the wet seasons is important because that's when groundwater levels are highest. There is more rain, and plants without foliage absorb less water. In east Tennessee, the wet season typically runs from December through March.

Prior to the start of monitoring, workers installed an impermeable geomembrane over an approximately 1.3 million square-foot area, simulating the effect the disposal facility liner system will have on groundwater elevations.

Results from the first wet season showed groundwater elevations steadily declined over this first wet season by preventing precipitation from infiltrating the future EMDF disposal cell area.

Groundwater elevation monitoring is a requirement listed in the project's record of decision approved by DOE, the EPA and TDEC.

The team, which includes subcontractor CTI, also finished installing utilities at the site to support future EMDF construction activities and operations.

-Contributor: Ella Stewart

July

In a First, Oak Ridge Crews Tackle Multiple Demolition Projects at ORNL

For the first time ever, cleanup crews conducted more than one demolition project simultaneously at ORNL.

While crews with OREM and contractor UCOR begin demolishing Building 3003, another team was tearing down the former Radioisotope Development Lab, one of the most contaminated structures at the site.

Used during the Manhattan Project, Building 3003 was one of three support facilities for the former Graphite Reactor, the world's oldest reactor. The structures were located on a small footprint in a heavily congested area on top of a hill. Removing Building 3003 provided space to support teardowns of the neighboring facilities.

This project cleared 10,000 feet for workers and heavy equipment operators to demolish the adjacent Building 3002 and Building 3018, a 200-foot-tall stack.

Built in 1943, Building 3003 contained a fan house and provided ventilation for the Graphite Reactor. The fan house drew air from the reactor through underground ducts and released it through the stack.

To prepare for demolition, workers made multiple entries into the subgrade duct space to perform sampling, survey and spray fixative. They removed general debris and hazardous waste, and poured a concrete mixture into the exterior utility trench to ensure a flat working surface around the building.

The removal of these facilities cleared away aging, contaminated structures, opened land for reuse and enhanced accessibility to the Graphite Reactor, which is part of the Manhattan Project National Historical Park.

-Contributor: Carol Hendrycks

Demolition crews take the "first bites" of Building 3003 at Oak Ridge National Laboratory.

(Continued on page 9)

August

Oak Ridge Office of Environmental Management crews packed and shipped the first of the sodium shields to the Waste Control Specialists facility in Andrews, Texas, for vitrification.

Innovative Demonstration Creates Disposal Path for Challenging Oak Ridge Waste

Drawing from an innovative technology, OREM and contractor UCOR achieved a breakthrough set to eliminate a complex legacy waste stored at ORNL for the past 50 years.

Recently, DOE-EM crews shipped the first of several large aluminum and steel containers filled with highly reactive metals — called sodium shields — for use in a demonstration of the technology that provides a pathway for their permanent disposal. The demonstration was completed successfully.

The sodium shields were used in the 1960s and 1970s to pioneer radiation shielding research. The largest of them is about 5 feet high and weighs over 30,000 pounds.

This breakthrough effort was made possible through EM's Technology Operations Office funding the demonstration project to ship and process the first sodium shield.

The first challenge involved shipping the sodium shields from Oak Ridge. That challenge was solved after OREM and UCOR obtained a special permit from the U.S. Department of Transportation, thanks to a months-long effort by subject matter experts to conduct an extensive safety analysis and develop a packaging strategy for the waste.

The second challenge was determining if the selected technology could successfully process the reactive metals from the sodium shields. OREM and UCOR employed Veolia Nuclear Solutions' patented GeoMelt technology at the Waste Control Specialists facility in Andrews, Texas. The vitrification process proved successful by converting the metals into a stable glass form for safe, permanent disposal.

Sodium metal presents unique hazards because it is unstable and can be highly reactive when mixed with water. The GeoMelt process is unique because it does not use any liquid to support treatment and avoids generating other challenging waste steams during the treatment process. After treatment, the vitrified waste form no longer exhibits reactive or ignitable characteristics.

The Veolia demonstration project represents a crucial step in addressing challenging legacy waste streams from America's nuclear research history, establishing a potential template for handling similar reactive metal waste streams across the DOE complex.

-Contributor: Mike Butler

September

New Oak Ridge Center Opens, Bringing Footprint of Massive K-25 Into Focus

Visitors to the former Oak Ridge Gaseous Diffusion Plant can view the entire footprint of what was once the world's largest building from a new vantage point now that an interpretive center overlooking the site of the mile-long K-25 Building has opened.

K-25 was one of five large gaseous diffusion uranium enrichment facilities at the Oak Ridge location, now called ETTP. Constructed in 1943, it produced enriched uranium used in the weaponry that helped end World War II.

Local elected officials and other dignitaries gathered recently to celebrate the opening of the viewing facility, called the William J. Wilcox Jr. K-25 Interpretive Center.

The U.S. Army Corps of Engineers and its construction contractor, Geiger Brothers, completed construction on the K-25 Interpretive Center. The facility helps visitors understand the size and scope of the former Manhattan Project and Cold War-era uranium enrichment complex.

(Continued on page 10)

The center is named after Oak Ridge's first official historian, an original resident of the city when it came into existence in the 1940s. The late Wilcox ultimately became the technical director for all research and development programs for the plant, and he used his extensive knowledge from his 43 years of service to educate future generations about what was accomplished at the site.

Attendees included Tennessee Lt. Gov. Randy McNally, Roane County Executive Wade Creswell, Oak Ridge City Mayor Warren Gooch, Oak Ridge City Councilman Jim Dodson, American Museum of Science and Energy Foundation Executive Director Alan Lowe, UCOR President and CEO Ken Rueter, and OREM Manager Erik Olds.

OREM and cleanup contractor UCOR completed demolition of the K-25 Building in 2013, leaving behind a massive 44-acre footprint that was impossible to fully view from ground level. With the interpretive center's elevated view, the entire footprint is visible. The facility also features displays and exhibits, including a scaled model of the building, detailing K-25's extraordinary contributions through the years.

Construction of the center fulfilled an agreement OREM signed in 2012 to commemorate the history of the former Oak Ridge Gaseous Diffusion Plant. That commitment also included construction of the K-25 History Center next to the interpretive center, as well as preservation of the historic Alexander Inn.

Crews completed construction of the interpretive center through a partnership among OREM, the U.S. Army Corps of Engineers and contractor Geiger Brothers. UCOR and subcontractor Smee + Busby Architects designed the facility.

The interpretive center is the latest installation on a site that has seen major transformation during the past three decades. OREM and UCOR have completed demolition and soil remediation at the site, marking the first-ever cleanup of a gaseous diffusion complex.

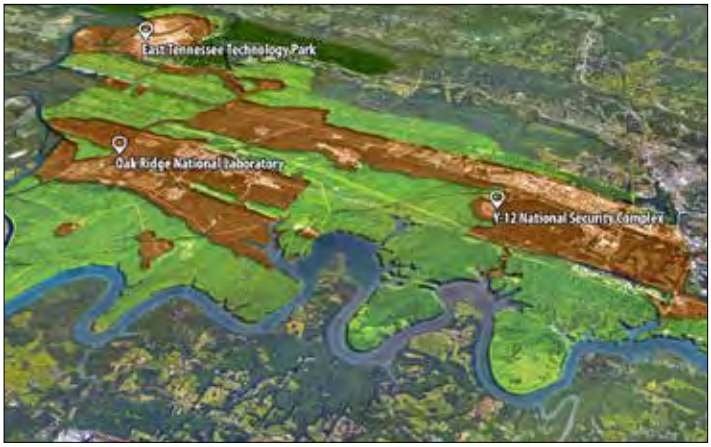
As OREM completed cleanup, it simultaneously made land available for new businesses. That land is attracting companies investing billions of dollars, creating new jobs and advancing energy technologies to meet the nation's future power needs.

-Contributor: Wayne McKinney

December

Half of Oak Ridge's Federal Acreage Deemed Suitable for Reuse

The EPA and OREM confirmed half of the federal acreage on the 33,000-acre Oak Ridge Reservation was not impacted by historic operations and does not require environmental cleanup.



More than 16,000 acres, shown in green, of the 33,000-acre Oak Ridge Reservation were not impacted by the U.S. Department of Energy's historic operations and do not require environmental cleanup. This designation provides clarity about the condition of the land, simplifies future transfers and supports beneficial reuse on those parcels.

This designation provides clarity about the condition of more than 16,000 acres, simplifies future land transfers and supports beneficial reuse on those parcels.

While DOE will not transfer all this acreage under the recent designation, the clarification presents a clearer understanding of the landscape and supports the transfers that do occur. It also allows for a wider variety of uses and developments on the land.

EPA placed the entire Oak Ridge Reservation on the Superfund program's National Priorities List in 1989 to expedite cleanup, said OREM Regulatory Specialist Roger Petrie.

OREM and TDEC have since conducted investigative efforts and environmental surveys to provide a clearer picture of the areas not impacted by DOE's previous operations. Now that information is being put to use, so that land can be, too.

This is among the most recent in a line of success from OREM and EPA's partnership in Oak Ridge.

Through support from EPA's Region 4 office, OREM is setting the pace for environmental cleanup across all the 175 federal facilities in the Superfund program. Since 2020, OREM has accounted for 16 percent of all completed cleanup tasks across those sites and 35 percent for Region 4 in the southeast region of the U.S.

-Contributor: Ben Williams

Key Issues

In 2025, ORSSAB sent one locally generated recommendation to DOE.

Full text of the recommendation and responses is available on the ORSSAB website at **energy.gov/orem/listings/orssab-recommendations-responses**.

Recommendation on FY2027 OREM Budget

Each year the DOE-EM Program develops its budget request for the fiscal year two years beyond the current year, including requests from DOE field offices to develop the EM Program budget request to the president.

DOE-EM Headquarters typically issues guidelines to the field offices advising them how much funding they should reasonably expect when developing their FY+2 budget requests. The field offices then brief the public, the regulatory agencies, and the respective site-specific advisory boards and seek input from each regarding budget requests.

On May 14, 2025, representatives from the OREM program presented information about its FY 2027 budget formulation process to ORSSAB. This presentation provided content and discussions that ORSSAB used to draft its recommendations.

In creating its recommendations for the FY 2027 OREM budget, ORSSAB focused on general near-term and long-term cleanup priorities identified by OREM. Project-specific objectives provided additional details for discussions that took place at the May 28, 2025, EM & Stewardship Committee meeting.

The board also referred to the current EM Budget Request, and the board's previous Recommendations for additional guidance on budget recommendations.

Recommendations

ORSSAB supports OREM's cleanup plan and recommends fully funding the activities that are currently supported by that Plan for FY 2027, broadly understood as follows:

- Continue demolition of excess contaminated facilities at Oak Ridge National Laboratory (ORNL) and Y-12 National Security Complex (Y-12).
- Continue demolition of excess contaminated facilities at ORNL & Y-12.
- Accelerate infrastructure development to enable future cleanup at ORNL and Y-12.
    - The primary focus being on the Mercury Treatment Facility construction and operation at the Y-12 National Security Complex.
- Continue disposition of U-233 material and other legacy materials.
    - Nickel, sodium shields, and other materials.
- Continue processing and disposition of legacy transuranic debris and sludges, including contact-handled and remote-handled wastes.
- Maintain and operate facilities at ORNL and Y-12.
- Continue funding support at ORNL's Aquatic Ecology Laboratory for research into mercury and methylmercury pollution and development of new and improved technologies.
- Continue funding to enable property transfers, including reindustrialization and site reuse support programs, to further the current nuclear renaissance taking place in the Oak Ridge corridor.
    - Efforts from TN Governor Bill Lee, Secretary of Energy Chris Wright, and President Donald Trump show the need for funding support for the nuclear industry.
    - Support research and development activities and fund contracts for academia for the next generation of nuclear workers.

ORSSAB recommends funding the FY 2027 budget to include all activities necessary to complete these cleanup priorities in an effective, timely and safe manner.

OREM and its contractors have continuously demonstrated an effective cost-to-value that leads the nation among federally funded facilities over a significant period of time and are recognized for their cleanup progress. Based on OREM's record of performance and effective project management, ORSSAB recommends additional funding wherever possible to accelerate the FY 2027 cleanup plan. With this support, OREM will continue to play a pivotal role in the nation's nuclear renaissance.

Members & Liaisons

Kris Bartholomew

Kris Bartholomew is the owner of Turn Key Plumbing and Construction, a small family-owned business. A high school graduate with some college, Kris has received licensures related to his trade. Those licenses include general contractor and subsurface sewage installer. He is interested in environmental and public health issues. He lives in Lenoir City.

Raiyan 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.

Mary Butler

Mary Butler is a former staff pharmacist with Aurora Pharmacy. She received a bachelor of science in pharmacy from the University of Wisconsin. She retired to Rockwood in 2020 and is eager to engage in the community here as she was previously active in several organizations in her native Wisconsin. Mary is interested in civic and educational issues.

Laure Clark

Laure Clark retired in 2019 after serving as an environmental, safety and health advisor for prime contractor Bechtel National, Inc. since 2001. She received a bachelor of science in Earth Studies from the University of Massachusetts and completed graduate work in Water Resources Management at the University of Nevada. Laure is interested in environmental issues and civic participation and lives in Oak Ridge.

Harold Conner, Jr.

Harold Conner, Jr., is a senior engineering advisor with Strata-G. In this role, he focuses on supporting community outreach, university partnerships, student internships and mentoring. Harold is a former K-25 plant manager, serving from 1968-1996. He has bachelor of science and master of science degrees in Chemical Engineering from the University of Tennessee, Knoxville (UT), where he was the program's first African American graduate in 1968. He received his Ph.D. in Industrial and Systems Engineering from the University of Alabama at Huntsville. He is active in many community organizations including: the UT Knoxville Alumni board; the UT Tickle College of Engineering board; the STEM Scouts board; the American Museum of Science and Energy board; and Strata-G's board. He is a fellow of the American Institute of Chemical Engineers and the American Society for Engineering Management. He is also a lifetime member of the National Society of Black Engineers and the National Organization of Black Chemists and Chemical Engineers. Harold lives in Knoxville and is interested in educational and minority issues.

Paul Dill

Paul Dill retired in 2018 as a project manager with Project Enhancement Corp. He received a B.S. in industrial engineering/technology management from Roger Williams University and an M.A. in psychology from Ashford University. Mr. Dill also earned a Master Project Manager certification from the American Academy of Project Management. He is currently an associate member of the American Psychological Association and a member of the Society for Personality and Social Psychology. Mr. Dill lives in Oliver Springs, which includes portions of Anderson, Roane, and Morgan counties. He is interested in environmental and public health issues.

Rosario Gonzalez

Rosario Gonzalez is a returning board member who served from 2016 through 2018. She recently retired as cafeteria manager of St. Mary's Catholic Church Cafeteria in Oak Ridge. She completed her secondary education in Mexico and received her GED from Pellissippi State. She lives in Oak Ridge and is interested in environmental and minority issues.

Amy Jones

Amy Jones 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. She owned her own business, Double J Enterprises of TN, in Rocky Top, Tennessee, for more than 20 years. Amy is active in a variety of community organizations, including the Anderson County Chamber of Commerce, the Anderson County Headstart Policy Council, the Women's

(Continued on page 13)

Ministry Banquet at Main Street Baptist, the Anderson County Republican Party, the Tennessee Republican Party, the Order of Amaranth, and the Order of the Eastern Star. She founded Christmas for Rocky Top Kids in 2018. She lives in Briceville and is interested environmental, economic, and county government issues.


Noah Keebler

Noah Keebler is a nuclear electronics technician with Ametek, which is a manufacturer of electronic instruments and electromechanical devices. Prior to that he was a radiological instrumentation specialist with Perma-fix Environmental Services. Mr. Keebler received an A.S. in Electrical Engineering from Roane State Community College. He holds a certification in Instrumentation from Ludlum Measurements and several other work-related certifications. Noah has Occupational Safety and Health Administration training, electrical safety experience and radiation worker training and is a member of the East Tennessee Chapter of the Health Physics Society. He has an interest in environmental issues. He lives in Knoxville.


Lauren LaLuzerne

Lauren LaLuzerne is on the administrative staff at the Oak Ridge National Laboratory through UT-Battelle, the DOE site facility management and operations contractor for the laboratory. She received a bachelor of arts in Sustainability Studies and Anthropology from the University of Florida and recently completed a master's degree in Natural Resources and Global Sustainability from Virginia Tech. She is interested in environmental and public health issues and lives in Loudon.


Mike Mark

Michael (Mike) Mark is a former first responder and hazmat professional. He earned a high school diploma and has many certifications related to his career. He lives in Harriman and is interested in environmental and economic development issues.


Thomas McCormick

Thomas McCormick is the city manager for the Town of Oliver Springs, which includes portions of Anderson, Roane, and Morgan counties. He received a B.S. in political science from Middle Tennessee State University. He also has numerous certifications from the State of Tennessee, including as a water and wastewater treatment plant operator. He lives in Oliver Springs and is interested in city/county government and environmental issues.


Harriett McCurdy

Ann (Harriett) 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. Most recently she served as a teacher of science and biology for grades 6-10 at Yangon Academy in Yangon, Myanmar. Prior to that, she taught a variety of science courses and environmental studies courses in China, Morocco, Kuwait, and Ecuador. Harriett received an M.A. in teaching biology and her teaching certificate from Washington University and a B.A. in biology from Earlham College. She is a past president of the Oak Ridge League of Women Voters and a member of Tennessee Citizens for Wilderness Planning, which is dedicated to achieving and perpetuating protection of natural lands and waters by means of public ownership, legislation, or cooperation of the private sector with a focus on the Cumberland and Appalachian regions of Tennessee. Harriett lives in Oak Ridge and is interested in educational and environmental issues.


Otto Merz

Otto Merz is a retired electrical foreman who worked at Pace Electric until September of 2021. He received an associate's degree in electrical from Milwaukee Area Technical College and maintains his electrical license from the State of Wisconsin and membership in the International Brotherhood of Electrical Workers Union, where he graduated from its apprenticeship program. Otto was previously active in community organizations in Wisconsin and, since moving to Tennessee, has joined the Norris Lake Project and Norris Lake Full-timers. He lives in La Follette and is interested in environmental and labor issues.


Christine Michaels

Christine Michaels is president of the Oak Ridge Chamber of Commerce. She received a bachelor of science in Public Relations from Empire State College and 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 a member of several organizations including: the Anderson County Economic Development Board, Adventure Anderson County (tourism board), Altrusa Foundation Board, Flatwater Tales Storytelling Festival Committee, and the East Tennessee Economic Development Board. She is a Paul Harris Fellow with the Rotary Club. Christine lives in Oak Ridge and is interested in economic development and business issues.

(Continued on page 14)

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.

Melanie Rogers

Melanie Rogers is an assistant teacher at Oak Ridge City Schools, where she works with the Wildcat Preschool Program at Oak Ridge High School. She received a bachelor of science and master of science in education from the University of Cincinnati and has volunteered locally at the American Museum of Science and Energy and Horse Haven of Tennessee. Melanie lives in Oak Ridge and is interested in educational issues and public health.

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.

Michael Sharpe

Michael Sharpe is a SharePoint administrator and performs other technology- and web-based tasks for Oak Ridge Associated Universities, which manages the Oak Ridge Institute for Science and Education for DOE. It provides science, education, workforce development, and health services that include some OREM areas such as decontamination verifications to support cleanup. He received a B.S. in business administration from Tusculum University and an A.S. in computer programming from ITT Technical Institute. He is interested in civic and environmental issues and lives in Lenoir City.

Kelli Thompson

Kelli Thompson retired as an attorney from a Knoxville law firm in 2015, but has continued a limited solo practice. She is also a photographer with a particular interest in public nature areas, including those on the DOE Oak Ridge Reservation. Kelli received a juris doctorate from the University of Tennessee in 1989 and a bachelor of science in Business Administration from Tennessee Technological University in 1986. She has authored legal materials for several publications and taught seminars on a variety of legal topics. She is a member of the Oak Ridge Environmental Quality Advisory Board and currently serves as president for the board of directors for the Appalachian Arts Crafts Center. She has been active in the community in several other organizations in the past. She lives in Oak Ridge and is interested in civic and environmental issues.

Thomas Tuck

Thomas Tuck is a banking executive with TNBank. He served as president of the bank since 1995 and in March of 2020 transitioned to part-time employment as part of a leadership transition/retirement. He received a bachelor of science in business and marketing from the University of Tennessee and is a Certified Banker through the School of Banking of the South. He is a member of boards of directors for local organizations including the Oak Ridge Chamber of Commerce, Oak Ridge Heritage & Preservation Association, and the East Tennessee Economic Council. He is a member of the Y-12 Community Relations Council. He lives in Knoxville and is interested in civic issues and economic development.

Agency Liaisons

These individuals serve as points of contact between the board and their respective agencies. A DOE liaison must be present at all board meetings. TDEC and EPA liaisons are often on hand to contribute to discussion and answer board member questions.

Erik Olds

Erik Olds became the OREM Manager. in June 2025 after previously serving as the OREM Deputy Manager. He is responsible for safely executing the environmental cleanup of the 30,000-acre Oak Ridge Reservation.

Melyssa Noe

Melyssa Noe is the board's Deputy Designated Federal Officer and previously served as the board's Alternate Deputy Designated Federal Officer. She is branch chief of program support in the Quality and Mission Support Division for OREM.

Roger Petrie

Roger Petrie serves as the board's Alternate Deputy Designated Federal Officer. He is the Federal Facility Agreement Project Manager for OREM.

Samantha Urquhart-Foster, EPA

Samantha Urquhart-Foster represents the Environmental Protection Agency. She is part of the Superfund Division in the agency's Region 4 Office, which covers the Southeast.

Kristof Czartoryski TDEC

Kristof Czartoryski is an environmental consultant with the Tennessee Department of Environment and Conservation. He is part of the agency's Division of Remediation in Oak Ridge.

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

K-25 Interpretive Center Brings Footprint into Focus

A scaled model of the K-25 Building on the top floor of the K-25 Interpretive Center provides additional insight into the size of the former structure as visitors view the building's massive 44-acre footprint.

Visitors to the former Oak Ridge Gaseous Diffusion Plant can view the entire footprint of what was once the world's largest building from a new vantage point now that an interpretive center overlooking the site of the mile-long K-25 Building has opened.

K-25 was one of five large gaseous diffusion uranium enrichment facilities at the Oak Ridge location, now called East Tennessee Technology Park (ETTP). Constructed in 1943, it produced enriched uranium used in the weaponry that helped end World War II.

Local elected officials and other dignitaries recently gathered to celebrate the opening of the viewing facility, called the William J. Wilcox Jr. K-25 Interpretive Center.

The center is named after Oak Ridge's first official historian, an original resident of the city when it came into existence in the 1940s. The late Wilcox ultimately became the technical director for all research and development programs for the plant, and he used his extensive knowledge from his 43 years of service to educate future generations about what was accomplished at the site.

"Our employees are proud to be part of the accomplished history of this site, and their efforts have played a pivotal role in making today possible," said Oak Ridge Office of Environmental Management (OREM) Manager Erik Olds.

"Our cleanup has paved the way for the public to be able to enter and experience a site that was once off limits, and it has created an exciting next chapter involving new businesses, new jobs, and new visitors through our land transfers, historic preservation, and conservation."

A scaled model of the K-25 Building is located on the top floor of the K-25 Interpretive Center. It provides additional insight into the size of the former structure as visitors view the building's massive 44-acre footprint.

OREM and cleanup contractor UCOR completed demolition of the K-25 Building in 2013, leaving behind a massive 44-acre footprint that was impossible to fully view from ground level. With the interpretive center's elevated view, the entire footprint is visible. The facility also features displays and exhibits, including a scaled model of the building, detailing K-25's

*(See **K-25** on page 7*

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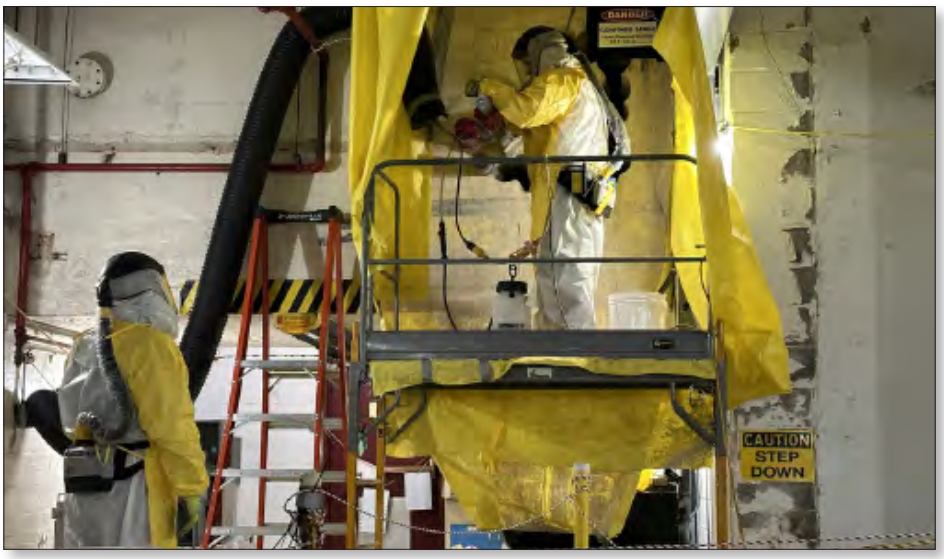
IN THIS ISSUE

Reservation Update



Workers perform deactivation activities inside Building 3003 at ORNL before demolition begins.

Crews Tackle Multiple Demolition Projects at ORNL

For the first time, UCOR cleanup crews conducted more than one demolition project simultaneously at Oak Ridge.

While crews began demolishing Building 3003, another team was tearing down the former Radioisotope Development Lab, one of the most contaminated structures at the site.

Used during the Manhattan Project, Building 3003 was one of three support facilities for the former Graphite Reactor, the world's oldest reactor. The structures were located on a small footprint in a heavily congested area on top of a hill. Removing Building 3003 provides space to support teardowns of the neighboring facilities.

This project clears 10,000 feet for workers and heavy equipment operators to demolish the adjacent Building 3002 and Building 3018, a 200-foot-tall stack.

Built in 1943, Building 3003 contained a fan house and provided ventilation for the Graphite Reactor. The fan house drew air from the reactor through underground ducts and released it through the stack.

To prepare for demolition, workers made multiple entries into the subgrade duct space to perform sampling, survey and spray fixative. They removed general debris and hazardous waste, and poured a concrete mixture into the exterior utility trench to ensure a flat working surface around the building.

The removal of these facilities clears away aging, contaminated structures, opens land for reuse and enhances accessibility to the Graphite Reactor, which is part of the Manhattan Project National Historical Park.

EM Assistance Keeps Energy Project on Track in Oak Ridge

In a unique collaboration, OREM and UCOR recently assisted one of the largest companies locating at ETTP, helping keep a key energy project on track.

OREM completed a two-decade cleanup effort at ETTP in 2024 that removed 500 buildings and excavated more than 50,000 dump truck loads of soil. This work cleared away old, contaminated infrastructure and environmental risks, providing the community with large amounts of reusable land to attract new economic opportunities.

One such opportunity came when Kairos Power announced a $100 million investment on the former DOE-owned land at ETTP in 2021. The company purchased a 185-acre parcel that previously housed the massive K-31 and K-33 uranium enrichment buildings demolished as part of the cleanup. While OREM removed the buildings

Workers supporting construction of Kairos Power's low-power demonstration reactor at the East Tennessee Technology Park load sacks of lead and copper from excavations for recycling, which will generate savings for the company.

and slabs, some subsurface electrical infrastructure was left in place.

Constructing a sturdy foundation for the company's Hermes Low-Power Demonstration Reactor involved deep digs requiring the removal of that subsurface infrastructure, including large amounts of lead and copper wire.

Through coordination and support from OREM and UCOR, Kairos Power was able to confirm the excavated materials were safe for normal disposal, while a significant portion could be recycled to generate major savings. With this confirmation, Kairos Power was able to recycle 18 super sacks containing more than 70,000 pounds of lead and copper.

Through this partnership, the company was able to maintain the timetable for the Hermes project, which is helping to commercialize advanced reactor technology to support the nation's energy future. This ongoing effort avoids costly disposal pathways, generates revenue, and provides lessons learned and best practices for future digs across the site as industrial development continues.

Innovation Addresses Waste Disposal Path Challenges

Drawing from an innovative technology, OREM and contractor UCOR have achieved a breakthrough set to eliminate a complex legacy waste stored at ORNL for the past 50 years.

EM crews recently shipped the first of several large aluminum and steel containers filled with highly reactive metals — called sodium shields — for use in a demonstration of the technology that provides a pathway for their permanent disposal. The demonstration was completed successfully.

The GeoMelt technology heats the sodium shields to more than 2,700 degrees Fahrenheit, turning the reactive metal into a stable glass form for safe, permanent disposal through a process known as vitrification.

The sodium shields were used in the 1960s and 1970s to pioneer radiation shielding research. The largest of them is about 5 feet high and weighs over 30,000 pounds.

This breakthrough effort was made possible through EM's Technology Operations Office funding the demonstration project to ship and process the first sodium shield.

The first challenge involved shipping the sodium shields from Oak Ridge. That challenge was solved after OREM and UCOR obtained a special permit from the U.S. Department of Transportation, thanks to a months-long effort by subject matter experts to conduct an extensive safety analysis and develop a packaging strategy for the waste.

The second challenge was determining if the selected technology could successfully process the reactive metals from the sodium shields. OREM and UCOR employed Veolia Nuclear Solutions' patented GeoMelt technology at the Waste Control Specialists facility in Andrews, Texas. The vitrification process proved successful by converting the metals into a stable glass form for safe, permanent disposal.

In a demonstration at the Waste Control Specialists facility in Andrews, Texas, a vitrification process successfully converted the first of the sodium shields stored at ORNL into stable glass for disposal.

Sodium metal presents unique hazards because it is unstable and can be highly reactive when mixed with water. The GeoMelt process is unique because it does not use any liquid to support treatment and avoids generating other challenging waste steams during the treatment process. After treatment, the vitrified waste form no longer exhibits reactive or ignitable characteristics.

The Veolia demonstration project represents a crucial step in addressing challenging legacy waste streams from America's nuclear research history, establishing a potential template for handling similar reactive metal waste streams across the DOE complex.

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Recent Recommendation

Recommendation 258: On FY 2027 OREM Budget Priorities

Each year the DOE-EM Program develops its budget request for the fiscal year (FY) two years beyond the current year, including requests from DOE field offices to develop the EM Program budget request to the president.

DOE-EM Headquarters typically issues guidelines to the field offices advising them how much funding they should reasonably expect. The field offices then brief the public, the regulatory agencies, and the respective site-specific advisory boards and seek input from each.

On May 14, 2025, representatives from OREM presented information about its FY 2027 budget formulation process to ORSSAB. This presentation provided content and discussions that ORSSAB used to draft its recommendations.

In creating its recommendations, ORSSAB focused on general near-term and long-term cleanup priorities identified by OREM. Project-specific objectives provided additional details for discussions that took place at the May EM & Stewardship Committee meeting.

The board also referred to the current EM Budget Request, and the board's previous Recommendations for additional guidance.

Recommendations

ORSSAB supports OREM's cleanup plan and recommends fully funding the activities that are currently supported by that Plan for FY 2027, broadly understood as follows:

- Continue demolition of excess contaminated facilities at ORNL and Y-12 National Security Complex (Y-12).
- Accelerate infrastructure development to enable future cleanup at ORNL and Y-12.
  - The primary focus being on the Mercury Treatment Facility construction and operation at the Y-12 National Security Complex.
- Continue disposition of U-233 material and other legacy materials.
  - Nickel, sodium shields, and other materials.

*(See **Recommendation** on page 7)*

FY 2026 ORSSAB Workplan Topics

ORSSAB meetings are held in person at the DOE Information Center, located at 1 Science.gov Way in Oak Ridge, and virtually via Zoom. Board recommendations are based on topics presented by DOE.

The board meets the second Wednesday of most months. In-depth discussion follows in the EM & Stewardship Committee meeting on the fourth Wednesday.

Questions? Want to attend virtually? Email *orssab@orem.doe.gov* at least two days before the meeting.

Note: Meeting dates, times and topics may change.

February

OREM Public Involvement & Outreach - How the organization communicates about its work and involves area residents in decision-making

March

Efforts to Assure Waste Disposal Capacity - Waste from cleanup activities is disposed of in a variety of ways, including a new landfill being built.

April

Reindustrialization and Historic Preservation Activities at ETTP - Transfers of clean land are bringing new companies and jobs to the area, while other projects memorialize local involvement in the Manhattan Project.

National EM SSAB Chairs meeting - Officers from boards like ORSSAB across the country meet to discuss best practices and hear from DOE on topics of nation-wide impact.

May

FY 2028 Budget Development/Prioritization - OREM discusses how local needs are included in the President's budget request to Congress and invites board input.

June

Y-12/ORNL Update - Discussion of specific cleanup projects affecting two active DOE sites.

July

No meeting due to new member training

August

Annual Planning Meeting for next year's topics

September

No meeting

Cleanup Progress Paves Way for Nuclear Industry Growth

Advances on OREM's cleanup mission are creating unique opportunities for the nuclear industry. The effect was evident at a crowded Nuclear Opportunities Workshop last fall.

This marks the seventh edition of the annual event hosted by the East Tennessee Economic Council (ETEC). What began with 85 attendees in a conference center at ORNL in 2018 has grown into a two-day conference at the Knoxville Convention Center with attendance surging to 800 attendees and more than 175 students.

"Building on our Manhattan Project-era legacy of nuclear innovation, East Tennessee is again at the forefront of new nuclear technologies that have the potential to change the world," said Tracy Boatner, ETEC president and CEO. "The state of Tennessee has many valuable resources for companies in the nuclear industry. The Nuclear Opportunities Workshop provides a platform to display those resources for companies interested in joining the nuclear renaissance occurring in our state."

One of the featured panels at this year's conference was titled, "Cleanup Today for a Nuclear Tomorrow." Participants included OREM Manager Erik Olds, UCOR Director of Critical Projects Joe Aylor, Orano USA President and CEO Jean-Luc Palayer, and Oak Ridge Corridor Development Corporation President Mike Magill.

Panelists shared insight about the connection between cleanup and economic opportunities happening in the region — specifically, how successful cleanup of ETTP has led to the siting of the nation's first nuclear innovation hub.

Oak Ridge's landscape was markedly different only seven years ago when the workshop launched. Cleanup progress since then has paved the way for a business boom.

NOW Conference panelists, including OREM Manager Erik Olds, center, discuss "Atomic Insights: Cleanup Today for a Nuclear Tomorrow."

Since 2018, OREM and UCOR crews have finished demolition and completed soil remediation at ETTP, marking the first removal of a former enrichment complex in the world. OREM has also transferred 730 acres for economic reuse and development over that span.

Those efforts have transformed the site from a government-owned, shuttered uranium enrichment complex into a privately owned industrial park that has become a hub for nuclear energy development that will play a crucial role in the nation's energy future.

That land is now home to more than 25 businesses that are making a projected capital investment of $10 billion with an expectation to generate 2,500 new private sector jobs.

Cleanup is also generating benefits for the nuclear industry that extend beyond ETTP. OREM's work is also having a major impact at ORNL and Y-12.

OREM projects in recent years have cleared away numerous aging and contaminated structures — including former research reactors, laboratories and enrichment facilities — to make way for new infrastructure that will aid innovation and national security for the nation in the years ahead.

-Contributor: Ryan Getsi

> *"Building on our Manhattan Project-era legacy of nuclear innovation, East Tennessee is again at the forefront of new nuclear technologies that have the potential to change the world..."*
>
> *—Tracy Boatner, East Tennessee Economic Council president and CEO*

DOE Selects Thompson as New Division Director

Karen Thompson

DOE has named Karen Thompson as OREM's Planning and Execution Division Director. She had served in the role in an acting capacity since March.

"Karen's ownership of our mission, commitment to excellence, and people-first approach have always been at the forefront of her leadership style," stated OREM Manager Erik Olds. "These qualities and her values make her a key addition to our management team."

Thompson, who served as the Planning and Baseline Management Branch Chief since 2014, is a familiar face to many current and former ORSSAB members, having frequently presented information to the board about OREM's budget process.

In her role as Planning and Baseline management Branch Chief, Thompson was responsible for managing the day-to-day activities for property, budget formulation, baseline and planning, and project controls.

Prior to that, she was the ETTP Project Controls Analyst and the Coordinator for the K-25 Historic Preservation effort.

Manager

(Continued from page 8)

but its value as a resource goes well beyond that, Olds said, with perspectives that are different and valuable to a department that can be very focused and technical. The volunteer nature of the board and the accompanying variety of individuals it attracts gives OREM a "one-stop shop" to field questions and receive feedback from a broad slice of the community. Members have a wide variety of backgrounds—both technical and non-technical—and they all come to discuss cleanup projects in Oak Ridge for various reasons.

Formal recommendations are always useful, he said, but the process of getting people together and talking about things is often just as valuable and can give OREM "food for thought" that may impact project decisions in new and unexpected ways.

As ORSSAB works on its recruitment for 2026 members, Olds especially wants to encourage those new members as well as current members who may be hesitant to jump into the conversation.

"I always tell people you are at your most golden at the moment you come into an organization; You are best positioned to ask questions, challenge assumptions, and offer new perspectives," said Olds.

This will apply even more as OREM exclusively focuses on cleanup at Oak Ridge National Laboratory and Y-12 National Security Complex, which have their own unique situations after decades of work primarily at East Tennessee Technology Park.

"There are no wrong questions, there are no wrong perspectives," he said. "You're there because you have something unique to offer and unique questions to ask. So do it."

Erik Olds speaking at the Energy Technology and Business Association (ETEBA) Business Opportunities & Technical Conference.

Opportunities for growth

Olds also sees the board as a training ground for a new generation of OREM leaders and plans to incorporate more of his team into board presentations in the future.

He learns new things at almost every advisory board meeting, he said, and wants to give those opportunities to others serving OREM in different capacities so they see themselves as potential "ambassadors" of the program.

"[Everyone] should be able to go out and discuss the work that we do, and broadly describe why it is that we do that work," he said. "I think for anybody that's going to grow ... those are skills that you should always continuously work on."

For that, there's nothing like sitting at the table and being "on the spot," he added.

Recommendation

(Continued from page 4)

- Continue processing and disposition of legacy transuranic debris and sludges, including contact-handled and remote-handled wastes.
- Maintain and operate facilities at ORNL and Y-12.
- Continue funding support at ORNL's Aquatic Ecology Laboratory for research into mercury and methylmercury pollution and development of new and improved technologies.
- Continue funding to enable property transfers, including reindustrialization and site reuse support programs, to further the current nuclear renaissance taking place in the Oak Ridge corridor.
    - o Efforts from Tennessee Governor Bill Lee, Secretary of Energy Chris Wright, and President Donald Trump show the need for funding support for the nuclear industry.
    - o Support research and development activities and fund contracts for academia for the next generation of nuclear workers.

ORSSAB recommends funding the FY 2027 budget to include all activities necessary to complete these cleanup priorities in an effective, timely and safe manner.

OREM and its contractors have continuously demonstrated an effective cost-to-value that leads the nation among federally funded facilities over a significant period of time and are recognized for their cleanup progress. Based on OREM's record of performance and effective project management, ORSSAB recommends additional funding wherever possible to accelerate the FY 2027 cleanup plan. With this support, OREM will continue to play a pivotal role in the nation's nuclear renaissance.

DOE Response

While DOE does not have to agree with ORSSAB recommendations, it must respond.

OREM Manager Erik Olds provided favorable responses to each of the board's seven recommendations. Additional context was provided for several of the items, including plans for the Mercury Treatment Facility, disposition of sodium shields, and reindustrialization and site reuse programs.

The full text of DOE's response is included on the board's website along with the recommendation and those documents can also be accessed in person at the DOE Information Center.

K-25

(Continued from page 1)

extraordinary contributions through the years.

Construction of the center fulfills an agreement OREM signed in 2012 to commemorate the history of the former Oak Ridge Gaseous Diffusion Plant. That commitment also included construction of the K-25 History Center next to the interpretive center, as well as preservation of the historic Alexander Inn.

Crews completed construction of the interpretive center through a partnership among OREM, the U.S. Army Corps of Engineers and contractor Geiger Brothers. UCOR and subcontractor Smee + Busby Architects designed the facility.

"This center is an important piece commemorating the historical significance of the K-25 Building, and its construction completes one of the final tasks to achieve our vision for the site," said Mark McIntosh, ETTP portfolio federal project director. "We've finished major field work to clean the site, and our efforts have also made it possible for future generations to learn about what was accomplished here."

The interpretive center is the latest installation on a site that has seen major transformation during the past three decades. OREM and UCOR have completed demolition and soil remediation at the site, marking the first-ever cleanup of a gaseous diffusion complex.

As OREM completed cleanup, it simultaneously made land available for new businesses. To date, 1,800 acres of former government land have been transferred to the community for economic development. That land is attracting companies investing billions of dollars, creating new jobs and advancing energy technologies to meet the nation's future power needs.

-Contributor: Wayne McKinney

Join Us for a Discussion on Ensuring Waste Disposal Capacity

6 p.m. Wednesday, March 11
1 Science.gov Way and
Virtually via Zoom

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

Advocate
Oak Ridge Site Specific Advisory Board
January 2026

New manager recognizes advisory board as key resource

Erik Olds was named manager of OREM in June of this year after serving in an acting capacity following the retirement of former manager Jay Mullis in March.

Looking back, Olds said his time in Oak Ridge has been an incredible journey so far. He's especially excited about the acceleration of the cleanup work following a host of executive orders from the new administration emphasizing efficiency, doing things faster, deregulation, and a shared focus on the cleanup mission enabling opportunities for new nuclear and career opportunities. Those initiatives were some of what he talked about at the National Cleanup Workshop in September.

Olds brings more than 30 years of experience from around the DOE complex to the new position, including more than a year as OREM deputy manager. He has been a familiar face at ORSSAB meetings in that time. It's a practice he plans to continue as manager in keeping with a firm belief in the importance of the board to DOE's decision-making.

"Discussions with the board really, really improve and help the decisions that we make and they enrich them," he said, adding that even when there's broad agreement, the dialogue can result in positive subtle changes.

Olds is no stranger to the advisory boards, thanks to a wide-ranging career. He first encountered the citizen board in Nevada, while working at what was then known as the Nuclear Test Site, then more directly at the Hanford site in Washington state. For part of his 20 years at Hanford, Olds was director of communications, which included oversight of the advisory board there. He also spent time in positions at DOE headquarters in Washington, D.C., where he interacted with the Portsmouth and Paducah boards, and attended SSAB Chairs Meetings where he was able to meet officers from most other boards.

Power of perspective

ORSSAB serves as an avenue for transparency and public involvement,

(See Manager on page 6)

Oak Ridge Site Specific Advisory Board
P.O. Box 4067, EM-94
Oak Ridge, Tennessee 37831
www.energy.gov/ORSSAB
orssab@orem.doe.gov

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: March 11, 2026
EM & Stewardship Committee: March 25, 2026

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

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Advocate
Oak Ridge Site Specific Advisory Board
January 2026

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Advocate
Oak Ridge Site Specific Advisory Board
January 2026

OREM-25-7669

FY 2025

Cleanup Progress

Annual Report on Oak Ridge Reservation Cleanup

OREM
Oak Ridge Office of Environmental Management

Message from the Manager

DOE Oak Ridge Office of Environmental Management

To the Oak Ridge Regional Community:

The U.S. Department of Energy's (DOE) Oak Ridge Office of Environmental Management (OREM) and its contractors and partners maintained steady progress in Fiscal Year 2025 on projects that are transforming all three sites in Oak Ridge and creating a bevy of new economic opportunities for the region. We are proud to share the details of those efforts in this year's Cleanup Progress Report.

Our employees maximized tax dollars in Fiscal Year 2025 by pushing forward wide-ranging projects, including building deactivation, demolitions, waste processing and disposal, and reindustrialization. That work removed hazards, reduced inventories of nuclear material, and opened land for DOE missions and private sector developments.

Crews have approached the halfway mark on the Alpha-2 demolition project. Taking down the 2.5-acre former uranium enrichment facility is the largest teardown yet at the Y-12 National Security Complex (Y-12), and removing it will provide much needed space for new infrastructure to support modernization and national security missions.

Workers were also busy preparing for other Y-12 demolition projects. Crews are in the final stages of deactivating Beta-1 and the early stages of cleanup in the massive Alpha-4 building. Both are Manhattan Project-era uranium enrichment facilities with sprawling footprints at the site.

Demolition crews have also been busy at the Oak Ridge National Laboratory (ORNL). Crews took down Building 3003, a support structure for the Oak Ridge Graphite Reactor dating back to 1943. They also removed a portion of the final hot cell from the former Radioisotope Development Laboratory, which is one of the most contaminated structures at ORNL.

Other teams performed deactivation activities in 17 buildings at ORNL. That list includes decades-old former research reactors, isotope labs, and support facilities. This year's efforts are laying the groundwork for major near-term skyline changes in the heart of ORNL that you'll read about in our next edition.

Old buildings weren't the only things disappearing. OREM also continued reducing inventories of nuclear material and radiological waste from storage in Oak Ridge during Fiscal Year 2025.

We advanced the highest priority cleanup project at ORNL by processing and disposing of 77 canisters of uranium-233, surging past the annual goal of 50 canisters. That processing campaign is now approximately 40% complete. Employees also completed eight shipments of transuranic waste, totaling 232 drums, to the Waste Isolation Pilot Plant in New Mexico for permanent disposal.

OREM also achieved a breakthrough to eliminate a complex waste that's been stored at ORNL for the past 50 years. We completed two shipments of large aluminum and steel containers filled with highly reactive metals—called sodium shields. Through a successful technology demonstration, this material was converted into a stable glass for disposal. The success of this project provides a pathway to eliminate the remainder of that waste.

I'm incredibly proud of how our efforts have continued transitioning the East Tennessee Technology Park (ETTP) from a nuclear remediation site into a thriving industrial center that benefits the community. We transferred another 50 acres for economic development this year, bringing the total to more than 1,800 acres. Employees also made progress toward transferring other parcels that will make hundreds of additional acres of land available for reuse in the months ahead. This transferred land is now home to more than 25 businesses and counting. Together, these companies are making a projected capital investment of $8 billion and expect to generate 2,500 private sector jobs.

Additionally, OREM and its regulators are setting an impressive standard nationally both for our coordination and results. We've signed four records of decisions over the past three years, including one this year that confirms all necessary soil cleanup is complete in the 1,400-acre area surrounding ETTP's main plant area. This process enables the reuse of land for continuing economic development.

Finally, our team fulfilled a long-standing commitment for historic preservation. Crews completed construction of the William J. Wilcox, Jr. K-25 Interpretive Center. The city now has a new attraction that provides a venue for visitors to visualize the size and scope of one of World War II's most historically significant sites.

Simply put, this level of success would not be possible without the support and involvement we enjoy from the Oak Ridge community. Thank you for your role in helping advance cleanup. We look forward to kicking off another productive year.

Erik Olds

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UCOR
United Cleanup Oak Ridge LLC

This report was produced by UCOR, DOE's Environmental Management contractor for the Oak Ridge Reservation.

Introduction

In Fiscal Year 2025, cleanup progress continued across the Oak Ridge Reservation with a focus on removing unnecessary facilities at Oak Ridge National Laboratory and the Y-12 National Security Complex. The DOE Oak Ridge Office of Environmental Management also continued facilitating economic development and nuclear innovation thanks to the successful cleanup of the East Tennessee Technology Park, which has made large tracts of land available for reuse.

The Oak Ridge Reservation has played key roles in our nation's defense and energy research. However, past operations during the Manhattan Project and Cold War-era created legacies that require environmental cleanup and placed areas of the reservation on the U.S. Environmental Protection Agency's (EPA) National Priorities List, which includes sites nationwide that require cleanup under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). These areas on the Oak Ridge Reservation have been defined, and OREM is working to clean and restore them under a partnership with the EPA and the Tennessee Department of Environment and Conservation (TDEC).

Together, through the support provided by contractors, labor, Congress, and state and local officials, OREM is enhancing safety, removing barriers to economic development, and enabling vital missions in science, energy, and national security.

Oak Ridge National Laboratory

The Oak Ridge National Laboratory is DOE's largest multi-program national laboratory that conducts cutting-edge research in energy, materials and chemical sciences, nuclear science, and supercomputing. The site also houses numerous old, contaminated buildings and forms of waste from previous research and operations in past decades.

Workers demolish Graphite Reactor support facility

OREM and cleanup contractor UCOR have safely completed demolition of an unneeded ORNL facility—Building 3003, a support structure for the historic Oak Ridge Graphite Reactor.

Demolishing Building 3003 frees up more than 10,000 square feet of additional property that will be essential for upcoming demolition projects as well as modernizing ORNL's central campus.

Building 3003 was built in 1943 as a fan house supporting the Graphite Reactor—now part of the Manhattan Project National Historical Park—and was later modified and repurposed as a research facility.

Constructed in only nine months in 1943, the Oak Ridge Graphite Reactor was the second reactor in the world to achieve criticality and the first reactor designed for continuous use. It supported nuclear energy and medical research missions for 20 years before being shut down in 1963. It was designated a national historic landmark in 1965.

Located on a small footprint in a heavily congested area on top of a hill, Building 3003 provided many challenges during demolition. To overcome spatial constraints, OREM and UCOR developed a plan to use the footprint of the recently demolished Low Intensity Test Reactor for demolition support activities. Workers built a ramp between the two sites for debris transfer, and two additional pieces of demolition equipment were used for downsizing and loadout operations to avoid further congesting the 3003 footprint. The team members safely transported over 80 debris shipments to an onsite disposal facility.

Planning and preparation are ongoing for the demolition of the remaining Oak Ridge Graphite Reactor support facility structures, including the Building 3002 filter house and 3018 stack.

Above, demolition begins on Building 3003. Below, an aerial view of the facility during demolition.

Portion of final 3026 hot cell demolished

Workers have demolished the B sub-cell portion of the final hot cell at the former Radioisotope Development Laboratory (Building 3026). This project is removing one of the most contaminated structures from ORNL's central campus. The hot cells inside the former facility were heavily shielded concrete rooms that provided researchers protection from highly radioactive material. The lab's outer structure and five hot cells were previously demolished.

Crews are transporting waste on the intermodal rail system that was installed several years ago to manage the waste loadout from demolition of these cells. The team has shipped 38 cubic yards of waste weighing 112,000 pounds. They have also been training on remote-operated equipment to use during deactivation due to high radioactivity in sub cell A. Crews are scheduled to finish the final aboveground demolition in 2026.

Workers demolish a portion of the final hot cell that was part of the former Radioisotope Development Laboratory

3038 and Isotope Row being prepped for demolition

OREM and UCOR are making significant progress characterizing and deactivating numerous facilities at ORNL that are planned for demolition. These include the site's Isotope Development Lab, Building 3038, and a group of radioisotope processing facilities called Isotope Row.

At Building 3038, workers achieved a major milestone as five hot cells located in the facility were separated and three of them removed. Workers are now in the process of removing the other cells and planning the last major deactivation activity for this building. Leading up to cell removal, teams applied a foaming agent that immobilized contamination while cutting the pass-through chamber that connected the hot cells together. Stringent safety controls are necessary because of the hazardous materials contained in Building 3038. Constructed in 1949, this analytical and packing building contained equipment that was utilized for processing, conversion, and dispensing of radioactive isotopes. Past uses include the study of transuranic elements, fabrication of alpha- and neutron-emitting targets and sources, shipment of radioisotopes, and production of yttrium (90Y) for medical uses.

Adjacent to Building 3038, a group of 11 facilities known as Isotope Row are in various phases of demolition preparation, and those teardowns are scheduled to begin next year. These facilities were constructed in the 1950s and 60s to process radioisotopes. UCOR crews working in these facilities

Workers remove a hot cell from Building 3038

are also challenged with highly contaminated process systems and months of relentless heat in high hazard environments.

Most buildings are in various stages of decontamination activities, pipe and duct removal, and radiological surveys. Examples of work in progress include Building 3029, where workers are preparing to remove highly irradiated sources from Hot Cell 2 that cannot be extracted by hand. The plan is to use a remotely operated robotic system to keep the workers safe and reduce exposure.

In Buildings 3030 and 3031, final deactivation activities include removing and disposing of one hot cell from each building.

Many of the buildings require central ventilation system duct removal to be completed before they are demolition ready. The duct runs the length of Isotope Row outside the building and will be a major focus in the next year. Clearing away these facilities in the years ahead removes hazards, enhances safety, and opens space to expand ORNL's research missions.

Waste being removed from an Isotope Row building


MSRE

After testing, MSRE CPS system ready to go online

A new continuous purge system (CPS) at the Molten Salt Reactor Experiment (MSRE) facility is almost ready to begin operations after workers completed readiness and reliability testing throughout FY 2025.

MSRE was a test reactor that operated at ORNL from June 1965 until December 1969. The reactor salt and flush salt retain economic value. They remain stored in the fuel and flush drain tanks for future use either by ORNL or by other industrial entities. An off-gassing system is required to keep this critical storage unit safe until the salts are removed and the facility is demolished. The current Reactive Gas Removal System is nearing the end of its design life, necessitating the need for the new purge system.

Crews completed project installation work in mid-2024. After the testing this fiscal year, the CPS is anticipated to go online in 2026. The previous system is planned to remain in place and in ready status until workers firmly establish CPS operational reliability. The CPS will support many years of safe material storage at the MSRE.

New approach to address release potential

To address any key health or environmental risks more quickly, OREM is preparing an Engineering Evaluation/Cost Analysis to assess and address the potential for future releases of contaminants at MSRE. This replaces the Remedial Investigation Report approach that was planned previously. It will use the same nondestructive assay measurements and modeling methodology and results documented for remediation investigation, and it makes the best use of federal funds. The new approach also allows for a quicker response through the CERCLA removal action process.

OREM exceeds U-233 processing goals

OREM and its contractor, Isotek Systems LLC, made tremendous progress processing uranium-233 (U-233) at ORNL, exceeding goals set for the fiscal year.

An Environmental Management priority was to process 50 canisters of U-233 during the fiscal year. The Isotek team soared past that goal by processing 77 canisters, advancing the highest priority cleanup project at the site.

After completing facility upgrades and in-depth safety planning in 2022, OREM and Isotek began conducting significant processing operations on the remaining inventory of U-233 stored at ORNL. OREM and Isotek are tasked with eliminating the U-233 inventory stored at ORNL because it presents risks and is costly to keep safe and secure.

U-233 is a manufactured isotope created as an alternative nuclear fuel source in the 1950s, but it proved to be nonviable. The nation's inventory of U-233 was later sent to ORNL for long-term storage.

OREM finished disposing of approximately half of the U-233 inventory in 2017. The remaining material requires processing and downblending to convert it into a form safe for shipment and disposal. Conducting those operations involves the use of heavily shielded rooms, known as hot cells, to keep employees safe as they process the high-dose material. With the hot cell upgrades complete, employees have processed approximately 40 percent of the remaining inventory of U-233 and shipped 490,000 pounds of waste since the processing campaign began.

The current phase of the project, using hot cells, has enabled Isotek to enhance productivity by processing larger amounts of U-233. It also allows employees to extract more medical isotopes than the previous phase, which used gloveboxes.

Isotek extracts thorium-229 from the U-233 and supplies it to TerraPower, which then uses the material to create the actinium-225 needed for next-generation cancer treatment research. TerraPower, through a collaboration agreement with Cardinal Health, produces and distributes actinium-225. This public-private partnership could produce up to half a million doses of next-generation cancer treatments annually, 100 times more than currently available worldwide.

Workers load processed and downblended U-233 into a shipping cask for shipping and disposal.

Y-12 National Security Complex

The Y-12 National Security Complex is a premier manufacturing facility dedicated to protecting our nation. Y-12 helps ensure a safe and reliable nuclear weapons deterrent. The site also retrieves and stores nuclear materials from around the world, fuels the nation's naval reactors, and performs highly skilled, specialized manufacturing for government agencies and private-sector entities.

Demolition reaches halfway point at Alpha-2

Crews finished demolishing nearly half of the Alpha-2 building by the end of FY 2025. Demolition of this Manhattan Project-era uranium enrichment complex started in 2024, and workers steadily brought down more than 150,000 square feet of the facility. This project marks the largest demolition activity ever at Y-12.

The Alpha-2 facility occupies nearly 2.5 acres of land, and it is one of the largest high-risk facilities at Y-12. More than 60 percent of the facilities throughout the National Nuclear Security Administration (NNSA) complex are over 40 years old. Projects like this are clearing away outdated, contaminated infrastructure and opening space for modernization efforts. Workers began deactivating the Alpha-2 complex in 2020. That work included removing the last of the hazardous waste and draining oil from equipment. Crews had to clear various areas of the basement to allow it to be filled with controlled low-strength material (a concrete mixture). The material provides structural support for heavy equipment that is on the slab during demolition. Workers also had to plug storm drainage areas around Alpha-2 as one of the last preparatory steps to demolition.

While deactivation was going on inside Alpha-2, a separate project was underway on the outside to reroute active utilities around the building, including steam, gas, and water lines.

Demolition underway at the Alpha-2 Building

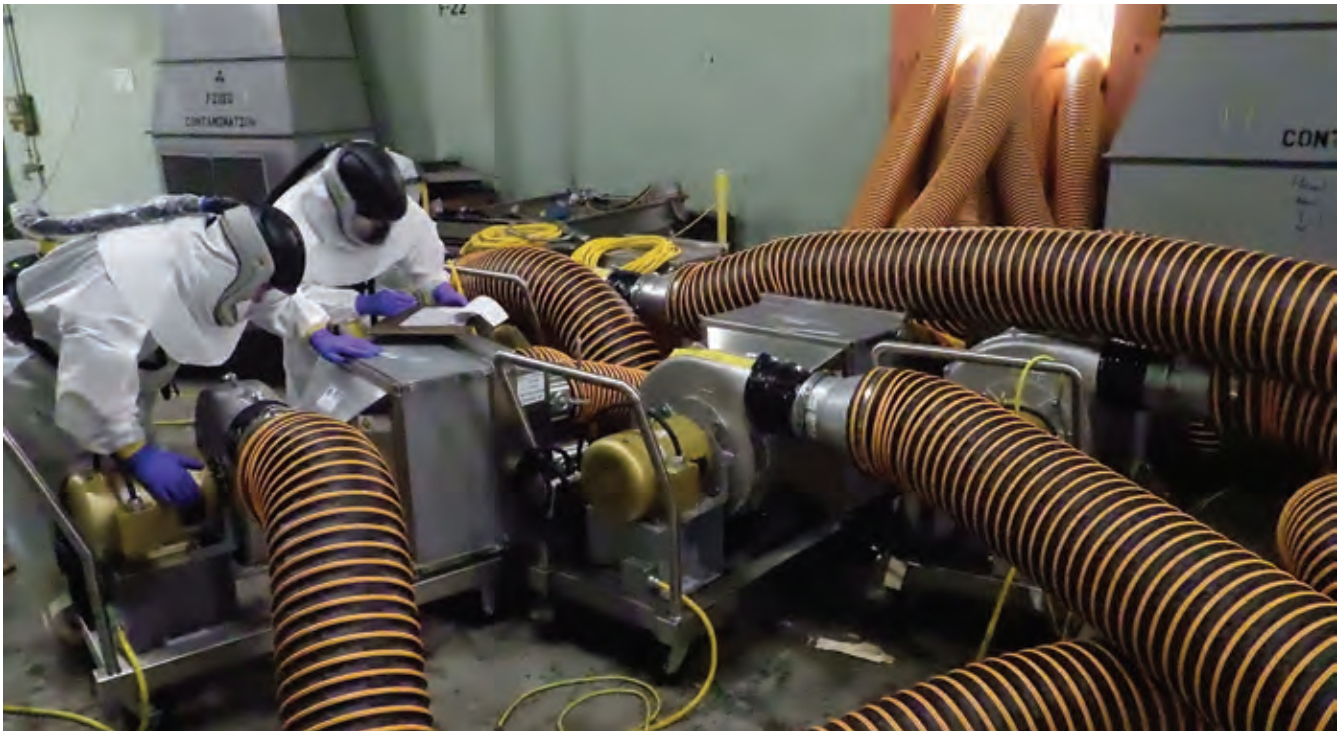
Deactivation progressing on former enrichment facilities

OREM and UCOR made considerable progress deactivating Alpha-4 and Beta-1 in preparation for future demolition. DOE also began initial planning for the upcoming deactivation and demolition of Beta-4, another enrichment facility. To address some of these mercury-contaminated facilities, UCOR developed a first-of-its-kind mercury worker safety program.

Beta-1: Beta-1 (Building 9204-1) is a two-story building spanning approximately 210,500 square feet. Beta-1 deactivation activities were focused in the basement of the building. Crews treated and discharged more than 9 million gallons of water from the basement using a special water treatment skid system that successfully achieves water quality standards needed for discharge. A second unit was built this year to accommodate the groundwater that continued to intrude into the basement. Keeping the water levels low meant that the team could perform characterization sample collection, clean 820 feet of mercury-contaminated pipe, and complete foaming of 2,028 feet of thorium-contaminated lines. As workers completed deactivation in areas of the basement, they placed controlled low-strength material (a concrete mixture) to support the future heavy equipment needed for demolition. Workers drilled over 500 holes in the first floor to pour the material.

Alpha-4: During 2025, workers continued preparing Alpha-4 (Building 9201-4), a 561,000-square-foot, four-story facility, for deactivation. Alpha-4 is one of Y-12's largest high-risk facilities, with elemental mercury contaminating much of the structure. Like Alpha-2 and Beta-1, Alpha-4 was used to enrich

Workers perform deactivation activities in Beta-1



Air flow testing being conducted in Alpha-4

uranium. As part of preparing for building deactivation, workers have continued to sort and sample materials and characterize legacy waste containers. They have prepared 394 out of the 447 legacy waste boxes and drums for disposal. Workers also conducted infrastructure activities to support future work.

Beta-4: OREM has started initial planning to deactivate the three-story, 300,000-square-foot Beta-4 building. Crews have conducted pre-mobilization activities such as soil sampling, installing worker facilities (showers, restrooms, etc.), and planning to bring the building to a cold-and-dark status (disconnection of all utilities).

Declassification effort saves millions of dollars

As workers prepare to tear down the Alpha-4 building, they must process and disposition thousands of pieces of classified equipment and systems—a costly process. However, OREM and UCOR have identified a more cost-effective way to address this important step in preparing the building for demolition.

Approximately 3,000 items in the 561,000-square-foot building, originally used for uranium separation operations, were identified as being classified. Removing them, which requires special handling and disposition, would have taken 4.5 years at a cost of $66 million.

Officials identified an opportunity to reduce the scope of removing these classified pieces of equipment, saving both money and time. By declassifying equipment and systems when possible, the number of items requiring classified disposal was reduced from 3,000 items to only 300. As a result, the schedule was decreased by 1.5 years, saving $16 million in cost.

Alpha-4

Old Steam Plant: Crews removed the exterior asbestos of the Old Steam Plant (Building 9401-01), a smaller single-story building. The interior deactivation activities were completed in 2021.

Built in 1943, this building first served as a steam plant for the east end of Y-12 and was later used for fuel testing, storage, and recycling. The demolition of this building is planned for 2026.

Significant concrete, structural steel installed at Mercury Treatment Facility

Construction of the Mercury Treatment Facility

Because many of the Y-12 buildings to be demolished have mercury contamination, OREM and UCOR are building infrastructure that will help prevent mercury migration during those cleanup projects. This facility is designed to prevent mercury releases into the Upper East Fork Poplar Creek during demolition of Y-12's large mercury contaminated facilities including Alpha-4, Alpha-5, and Beta-4.

Workers completed significant concrete activities at the headworks facility in FY 2025, including the storm flow structures, which allowed them to backfill to a 930-foot elevation to reduce water management risks. Workers also completed major structural steel activities to enclose the treatment facility.

Scrapyard cleanup will enable land reuse

Workers perform sampling activities at White Wing Scrap Yard

Activities at White Wing Scrap Yard (WWSY) have shifted from a sitewide remedial investigation for early remedial action to characterization for a time-critical removal action.

The change in approach is to ensure that the adjacent Self Sufficiency Parcel 2 (SSP-2), slated for land transfer, has not been compromised by historical activities at WWSY. Characterization activities have included:

- visual and radiological surveys of approximately 100 acres
- two rounds (dry/wet season) of groundwater sampling across the WWSY area
- two rounds (dry/wet season) of surface water sampling
- one round of sediment sampling in the tributaries that collect runoff from WWSY
- excavation of test pits at historical geophysical anomaly locations and potential drum burial areas

- collection of numerous soil samples across the WWSY area

Before completing the above activities, workers cleared small brush across approximately 45 acres to allow characterization teams access to areas that had been previously inaccessible due to unmanaged vegetation growth over the past 30+ years. The clearing also helped the teams identify safety hazards that had previously been hidden by the overgrowth.

The project management team is in the process of developing the Time-Critical Action Memorandum that will outline the cleanup of soils in areas closest to the SSP-2 parcel, which is planned for the spring of 2026. The team is also developing a Waste Handling Plan that will help determine the final disposition pathway for CERCLA waste across the entire WWSY area.

Water sampling at White Wing Scrapyard

East Tennessee Technology Park

The former Oak Ridge Gaseous Diffusion Plant began operations during World War II as part of the Manhattan Project. Its original mission was to produce enriched uranium for use in atomic weapons. The 2,200-acre plant was shut down permanently in 1987. All building demolition was completed in 2020 and soil remediation was completed in 2024, facilitating the site's transformation into a multi-use industrial park.

Final ETTP Zone 2 fieldwork initiated

ETTP is divided into two cleanup regions: Zone 1, a 1,400-acre area outside the main plant, and Zone 2, an 800-acre area that comprises the main plant area. UCOR completed major soil remediation at ETTP last year. The last remaining field activities under the ETTP Zone 2 Record of Decision began in FY 2025, with the completion of work for the electrical duct banks. The duct banks contained cables that once supplied power to K-25 and nearby facilities from the K-704 switch house. Vaults with manhole access were constructed along each duct to access the electrical cables, with most of the cables removed from the vaults in the late 1970s.

The work included assessing 95 manholes, sampling of water in 60 manholes and sediment in 24 manholes, and completing four Data Quality Assessment presentations that were based on data obtained in each quadrant of the duct banks to enable faster approvals in areas where redevelopment work was planned. Workers dewatered and grouted 27 manholes in the two eastern quadrants, completing all activities in that area. Dewatering and grouting of the manholes in the two western quadrants and additional characterization at one of the western manholes are expected to be complete in FY 2026. The completion of this work will eliminate any remaining hazards that these manholes may pose for future redevelopment.

Officials signed the Zone 1 Final Soils ROD in FY 2025, and the remedial action report for Zone 1 soils is currently in preparation. For Zone 2, the completion reports for EU Z2-11, -16, -30, -35, and -39 were transmitted to EPA and TDEC, with the completion report for EU Z2-20, -21, 22 in preparation. OREM anticipates the future completion report for the Zone 2 duct banks to be the last item before starting the remedial action report.

Duct bank grouting

Evaluating remaining media at ETTP

OREM and UCOR are evaluating other remaining media (surface water and sediment) across Zones 1 and 2 to determine if further action is needed. Onsite ponds and streams associated with site activities are being characterized. Sites being evaluated include the K-1007-P ponds (along Highway 58), K-901 Pond, K-720 Slough, K-770 Embayment, Oxbow Lake, the K-720 Beaver Ponds, (near the Powerhouse Greenway Trail), and Mitchell Branch.

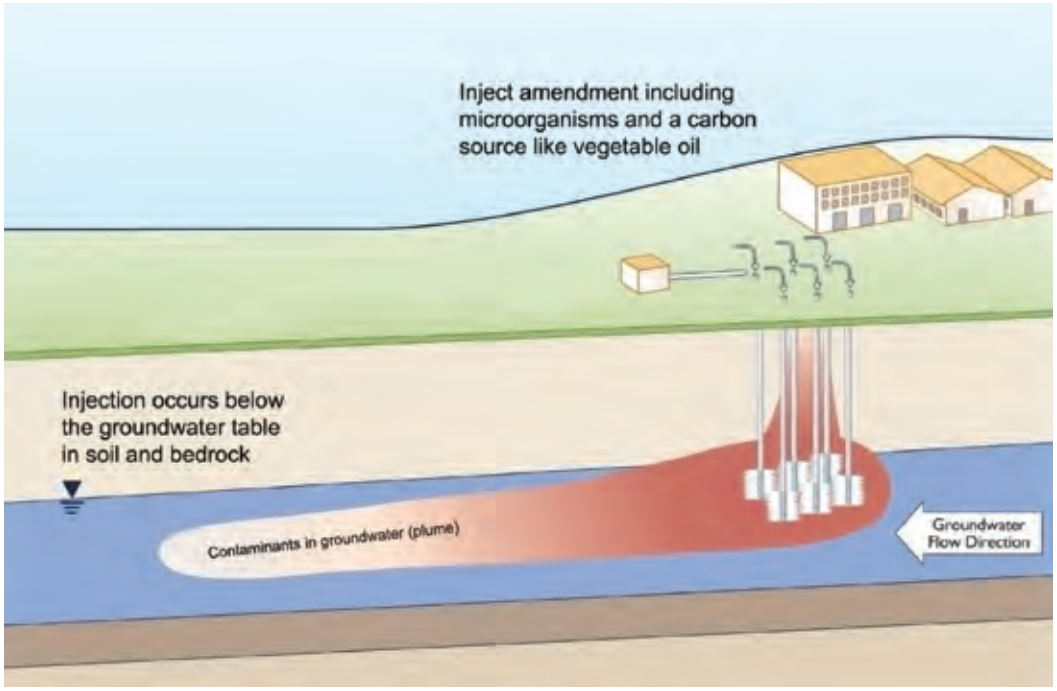
Groundwater remediation preparation underway

Following the decades-long cleanup of contaminated buildings, infrastructure, and soil at ETTP, OREM and UCOR are focused on groundwater remediation, which is the final phase of cleanup at the site. Officials continued preparing the planning to support the two ETTP groundwater Records of Decision (ROD)—the Main Plant Area Interim Record of Decision (IROD) and K-31/K-33 Area ROD—through FY 2025.

The selected remedy for K-31/K-33 area is called monitored natural attenuation. Through that approach, constituent concentrations in groundwater will decline naturally to levels that do not pose risks to human health or the environment. Land use controls restricting the use of groundwater also continue to be implemented at the site.

Active treatment at six groundwater plumes through enhanced in situ bioremediation is the selected remedy under the Main Plant Area IROD. This remedy modifies and augments environmental conditions to encourage the growth of microorganisms capable of reducing organic contaminants in the subsurface. This interim response action aligns with the overall groundwater remediation strategy for the Main Plant Area through reduction in groundwater contaminant mass, while providing additional characterization data for the Main Plant Area final ROD. ETTP is the first site on the ORR to implement full-scale groundwater remediation under an IROD. During these remediation efforts, land use controls across ETTP are in place to protect the public by prohibiting use of groundwater.

These significant regulatory achievements are a result of a commitment to partnership and collaboration and demonstrate the effectiveness of the recently revised regulatory framework among OREM, EPA, and TDEC.



Enhanced in situ bioremediation

K-25 Interpretive Center opens

The William J. Wilcox, Jr. K-25 Interpretive Center opened to the public in August 2025. Visitors to the former Oak Ridge Gaseous Diffusion Plant can now view the footprint of what was once the world's largest building from an elevated viewing platform inside the facility. It overlooks the footprint of the historic former mile-long K-25 Building.

K-25 was a gaseous diffusion uranium enrichment process building constructed in Oak Ridge during the Manhattan Project in 1943. It produced enriched uranium that contributed to the weaponry that helped end World War II.

The center is named after Oak Ridge's first official historian, an original resident of the Secret City when it came into existence in the 1940s. The late Wilcox ultimately became the technical director for all research and development programs for the plant. He used his extensive knowledge from his 43 years of service to educate future generations about what was accomplished at the site.

OREM engaged the U.S. Army Corps of Engineers to manage construction of the interpretive center through an interagency agreement. The Corps employed construction contractor Geiger Brothers to build it. UCOR and subcontractor Smee + Busby Architects designed the facility and provided engineering support during construction.

In addition to the expansive view of the former K-25 Building footprint, visitors can immerse themselves in exhibits that include a scale model of the K-25 Building as it appeared in 1945, digital photographs and animated videos of the K-25 Building and site, and graphic panels that inform visitors of the importance of this historic structure. Exhibit design was performed by Hilferty and Associates, and Capitol Museum Services fabricated and installed the exhibits under subcontract to UCOR.

In FY 2026, OREM plans to install visual indicators at each corner of the building footprint to illustrate the original dimensions and height of the structure.

Visitors can view a scaled version of the K-25 Building

K-25 Interpretive Center ribbon-cutting ceremony

K-25 Interpretive Center

ETTP becoming hub for nuclear innovation

The OREM Reindustrialization Program's vision for ETTP, following extensive environmental cleanup of the site, has led to the transformation of the former government uranium enrichment complex into a mixed-reuse industrial park. The transformation of the site has attracted several companies that are making significant investments in nuclear technology.

In 2025, OREM completed the transfer of the former K-27 and K-29 sites at ETTP to the Industrial Development Board of Oak Ridge. The 32.5-acre parcel is the site of the former K-27 and K-29 process buildings, two of the five main gaseous diffusion facilities that produced enriched uranium for decades. This transfer brings the total land transferred for economic reuse and development to 1,832 acres. This acreage is providing flat land near robust utilities and infrastructure to attract new industry to the site.

Due to the success of cleanup, reindustrialization, local workforce development, and the economic development efforts behind the state's Nuclear Energy Fund, several new nuclear companies announced commitments to invest and build facilities on transferred land. Nano Nuclear, partnered with Laser Isotope Separation Technologies, established their Nuclear Technology Headquarters and announced a contract within DOE's Low-Enriched Uranium Enrichment Acquisition Program to advance the nuclear fuel pipeline. Oklo announced bringing the country's first commercial nuclear fuel recycling plant to Oak Ridge, with a $1.7 billion investment that is expected to generate 800 new jobs. Radiant Industries announced a $280 million investment with 175 new jobs in manufacturing portable microreactors.

The emerging hub for nuclear innovation and production, especially at ETTP, is also an acknowledgement of the successful environmental cleanup of the site.

Development at ETTP and on the Oak Ridge Reservation

Waste Management and Operations

Wastes generated from cleanup activities on the Oak Ridge Reservation are addressed in a variety of ways. Most of the volume is disposed onsite in the Environmental Management Waste Management Facility or the Oak Ridge Reservation Landfills. However, the highly contaminated material is shipped offsite. Wastewater is treated at various facilities on the Oak Ridge Reservation.

Onsite facilities handling most cleanup wastes

Most of the waste generated during FY 2025 cleanup activities in Oak Ridge went to disposal facilities on the Oak Ridge Reservation—namely, the Environmental Management Waste Management Facility (EMWMF) and the Oak Ridge Reservation Landfills (ORRL). These disposal facilities are vital to cleanup progress and success, enabling OREM to accomplish more cleanup by avoiding costly and unnecessary offsite waste shipments.

EMWMF receives low-level radioactive and hazardous soil and building debris for disposal that meets specific criteria. In FY 2025, EMWMF received 2,076 waste shipments from cleanup projects at ORNL and Y-12 and 26 clean fill shipments for maintenance of the enhanced operational cover and construction of access roads and dump ramps within the landfill. The EMWMF landfill has a design capacity of 2.331 million cubic yards and has reached 85.7 percent of its capacity.

EMWMF generated 12.15 million gallons of landfill wastewater in FY 2025. Approximately 4.15 million gallons of leachate (water that enters the leachate collection system) was transported by tanker to the ORNL Liquid and Gaseous Waste Operations for treatment and discharge. Workers treated approximately 8 million gallons of contact water (water that contacts waste but does not enter the leachate collection system) and released it to Bear Creek after laboratory analysis verified it met all regulatory limits and discharge standards.

Other notable accomplishments at EMWMF for FY 2025 include:

- Began receiving waste from Y-12 Alpha-2 and the ORNL Building 3026 Hot Cell B.
- Continued to maximize use of available landfill airspace. Removed the temporary synthetic rain cover from portions of the northern sides of Cells 1-3, placed additional waste in the area, verified the grade, and covered the debris with waste clay and a membrane to minimize infiltration.
- Continued construction of a new dump ramp atop Cell 5.
- Upgraded onsite offices. Demolished the 5-plex Building 1316-B. Set up new office trailers in the East Complex and moved personnel from 9983-GV to the new complex.
- Continued upgrading the landfill water management systems. Replaced the heat trace/insulation and various controls/gauges at the Leachate Tank Farm. Began refurbishing the contact water conditioning system.
- Installed two additional groundwater monitoring wells west of the EMWMF landfill, culminating years of coordination with EPA and TDEC.

ORRL accepts sanitary and industrial waste and construction/demolition debris. In FY 2025, these three active landfills received 9,034 waste shipments, totaling 128,560 cubic yards of waste.

In FY 2025, ORRL compliantly discharged 4.9 million gallons of leachate from the three active landfills to the Y-12 sanitary sewer system.

The spoil area expansion (sedimentation pond area) was completed in FY 2025. Environmental studies are being conducted on the acreage reserved for the future expansion of the spoils area. Workers completed seep mitigations for Sanitary Landfill II (a closed landfill) in FY 2025.

In FY 2025, ORRL continued improvements for sediment and erosion controls. These measures included upgrading drainage features, which significantly reduces the amount of sediment released from these landfills. TDEC inspections in FY 2025 noted excellent sediment and erosion controls with no areas of concern or violations.

In addition, the Environmental Management Disposal Facility (EMDF) and Landfill Operations projects worked together to find beneficial use for the excess EMDF spoils that generated savings for other projects. Excess mulch and soil from EMDF were used at another landfill site. Workers placed nearly 600 cubic yards of mulch around the site for erosion and sediment control and then placed about 40,000 cubic yards of soil as a maintenance action to recontour the area, improving drainage.


EMWMF

Groundwater monitoring underway at EMDF site

The Environmental Management Disposal Facility (EMDF) is needed for waste generated from ORNL and Y-12 cleanup as EMWMF is nearing capacity. Construction activities continued in FY 2025 and design efforts are underway.

Workers began fieldwork for the Groundwater Field Demonstration in February 2024 and completed construction of the cover system in November 2024. They completed additional utility extension construction in April 2025.

The cover system replicates conditions following construction of the landfill liner system. Groundwater elevations are being monitored for two wet seasons following installation of the cover to ensure the liner system will be above the groundwater elevation in this area. The first wet season monitoring was completed in early 2025, and a Technical Memorandum was prepared to document the results. The second wet season will end on April 30, 2026. The landfill final cell design will be based on the information from the wet season monitoring.

Teams are also advancing the design of the Landfill Water Treatment System for the future EMDF. A treatment optimization study began in February 2025 and will be completed in FY 2026. This information will inform the specifics of the water treatment system.

OREM continues to work with EPA and TDEC on regulatory documents for the EMDF landfill. OREM prepared and submitted the Waste Acceptance Criteria Compliance Plan to EPA and TDEC for review in FY 2025 and expects it to be approved in FY 2026.

Workers perform groundwater monitoring at EMDF

EMDF

Advanced technologies assisting in remediation

OREM is performing technology development to support mercury and other types of cleanup on the Oak Ridge Reservation. To support this objective, employees achieved significant goals in 2025.

Workers completed full scale treatability tests where FerroBlack® was sprayed on the walls, floors, and equipment to reduce mercury vapor in two locations in Alpha-4. Use of FerroBlack® has the potential to significantly reduce mercury vapor generation because it is an active chemical capture process rather than a simple encapsulant.

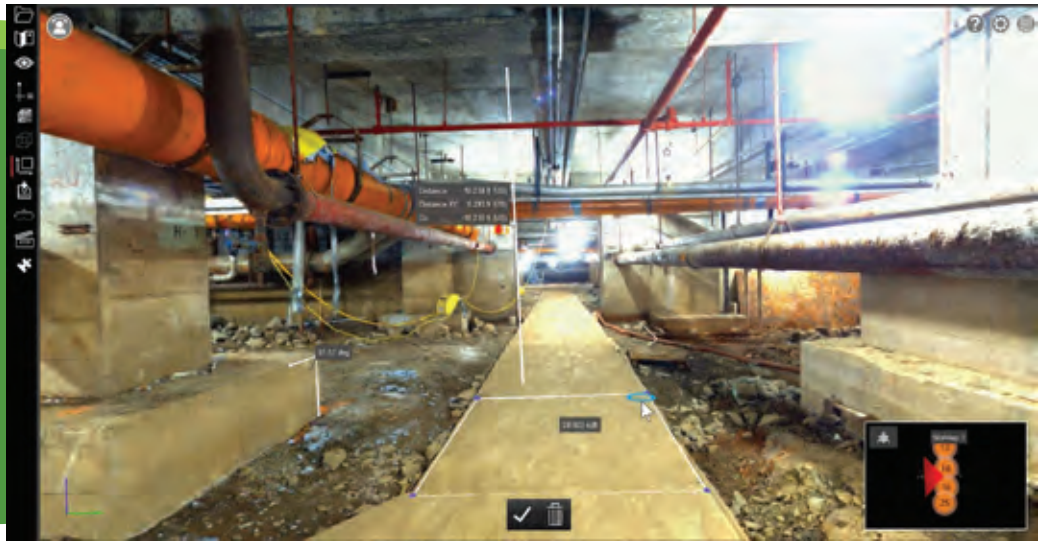
The results indicated that room mercury vapor concentrations decreased significantly immediately after application and stayed considerably lower. OREM and UCOR started studies to understand the disposal requirements of material that has been sprayed with FerroBlack®. This aspect of the study will be completed in FY 2026.

The ORNL Aquatic Ecology Laboratory completed a lab analysis study on FerroBlack® and other potential vapor reducing products. Based on the results, workers conducted a bench scale test with the FerroBlack® product placed in two small waste disposal boxes with mercury-contaminated equipment. The results showed a reduction in mercury vapor levels. The team implemented a full-scale test of a mercury vapor filtration system in Alpha-4. Workers set up a portable air filtration system in a contaminated portion of the building and tested three different filtration media. The filtration material reduced the effluent concentrations by 65 to 97 percent. The addition of a filtration system to a ventilation system will result in notable reductions in mercury concentrations, allowing for a safer work environment in mercury-contaminated facilities.

The team purchased a Trimble X9 LiDAR system and trained individuals in its use. Workers used the 3-D laser scanner in ORNL and Y-12 facilities to remotely map the locations of various piping and equipment components. These tests were used to collect location survey data and to train users on post-processing and data management. This technology will be helpful in assessing and documenting what components exist in a new facility and what components are left behind once deactivation is complete.

Also at ORNL's Aquatic Ecology Laboratory, workers conducted laboratory experiments using brominated activated carbon to test its mercury sorption properties. The results showed that the material worked faster and sorbed more mercury than other sorbents that were tested, proving it could be a key tool in mercury remediation efforts.

The LiDAR technology allows measurements to be taken remotely inside buildings



TWPC processing, shipping wastes off Reservation

The Transuranic Waste Processing Center (TWPC) successfully completed eight shipments, totaling 232 drums, of legacy transuranic waste to the Waste Isolation Pilot Plant (WIPP) in New Mexico. Including these shipments, TWPC has shipped more than 7,200 containers to WIPP. That figure represents 94% of Oak Ridge's inventory of the lower-contaminated contact-handled transuranic waste and 80% of higher-contaminated remote-handled waste. TWPC officials also concluded a federal readiness assessment of controls needed to support oxide processing at the facility.

A DOE team issued its final report in August 2025 based on a 10-day review of the facility's preparations, training, systems, processes, and overall readiness to conduct oxide processing activities. DOE authorized start-up, enabling TWPC to begin processing non-reactive oxides.

Workers will repackage legacy oxides from ORNL into a vented overpack before being packaged into a container for shipment to WIPP. TWPC has been working on implementing controls to support oxide processing since 2018.

TWPC also successfully completed processing of the first 7 cubic meters of cellulosic waste ahead of schedule, meeting an incremental milestone established by DOE. The 7 cubic meters represent about one-third of the total volume of cellulosic waste contained in more than 100 drums stored at TWPC.

This work followed the first approval in the DOE complex by the Carlsbad Field Office for a new waste treatment process for non-compliant cellulosic waste such as cotton rags, paper towels, cheese cloth, and absorbent pads that potentially contain oxidizing chemicals. After sorting cellulosic wastes from compliant waste, the team encapsulates the cellulosic material in grout and repackages the waste into a compliant container for characterization, certification, and shipment to WIPP.

TWPC also shipped its first 10-drum overpack, further streamlining the transfer of transuranic waste containers to WIPP. The overpack is designed to hold up to 10 standard 55-gallon drums and can also be used for larger items that don't fit into standard drums. It provides an additional layer of protection and containment for smaller containers during storage or transportation. The 10-drum overpack differs from the usual method of loading, which involves shrink-wrapping together seven 55-gallon drums of waste and then loading them into a container.

During FY 2025, TWPC successfully completed the processing and shipment of a specialized radioactive source to an out-of-state facility for permanent disposal. The shipment consisted of approximately 10 curies of Radium-226 Boron in a solid sealed source that had been used in neutron bombardment experiments at ORNL in the 1970s.

In another key development, an enhanced imaging capability developed by UT-Battelle is helping TWPC better understand the contents of waste containers and improve planning for their processing. The technology currently being used did not allow technicians to see past lead shielding in the containers, limiting their ability to accurately characterize the contents. The advanced UT-Battelle technology, with a much higher energy level, permits analysts to see past the lead shielding, revealing more of the container's actual contents.

A worker prepares to process legacy oxides

Workers take samples across the reservation to determine the nature and extent of contamination

Thousands of samples help guide remediation

In FY 2025, workers collected 22,142 groundwater, surface water, soil, sediment, biota, and miscellaneous solid and aqueous samples. They analyzed them to:

- identify areas of contamination,
- determine the nature and extent of contamination,
- determine when remedial actions are complete,
- provide information for the disposal of remediation waste, and
- assist in evaluating the long-term effectiveness of remediation.

This characterization supported activities including but not limited to:

- environmental characterization associated with remedial actions
- environmental compliance monitoring
- waste compliance and disposition sampling
- water treatment system performance and compliance sampling
- remedial investigation sampling associated with ETTP Zone 1 Groundwater, the ETTP Main Plant Area Remedial Investigation Work Plan, Bear Creek Valley Additional Mercury Sources, and the Y-12 Bear Creek Burial Grounds
- monitoring of active operations in support of the EMWMF and Oak Ridge Reservation Landfills and ORNL Liquid and Gaseous Waste Operations
- long-term performance and trend monitoring of completed actions for future decisions

This level of effort touches all aspects of the 32,000-acre Oak Ridge Reservation.

The Sample Management Office managed almost 36,000 samples (a combination of environmental, deactivation and demolition characterization, waste, bioassay, and industrial hygiene) by utilizing 14 analytical laboratory facilities for which data verification was completed at 100%. Workers performed nearly 4,500 validations of raw data packages and supported 19 audits/assessments of commercial analytical laboratories and treatment storage and disposal facilities. In addition, the Sample Management Office managed and uploaded 397,996 records to the Oak Ridge Environmental Information System. It also completed design, development, and implementation of a replacement database of environmental data that is used to support OREM's cleanup mission.

Groundwater monitoring gauges protectiveness

OREM continued to implement its groundwater strategy for the Oak Ridge Reservation in FY 2025. The *Phased Groundwater Remedial Investigation Work Plan for the Bethel Valley Final Groundwater Record of Decision* (DOE/OR/01-2824&D2) was approved in April 2021 with Phase 1 field activities commencing in FY 2024 and continuing through FY 2025. Field activities included drilling three new boreholes. Workers will document results in a Phase 1 Remedial Investigation Report once all Phase 1 well installation and monitoring are completed.

The ORR groundwater strategy involved developing a regional groundwater flow model that provides a framework for subsequent site-specific modeling for other ORR projects. OREM envisions groundwater modeling as a multi-year, ongoing effort with model applications in support of remediation and decision-making and interfaces with other projects. The site-specific flow models are tools that may be used to support future investigations and remediation under CERCLA.

In FY 2025, site-specific models were developed to support the upcoming monitored natural attenuation project for K-31/K-33 at ETTP. Additionally, workers collected new field data at the Bear Creek Burial Ground in support of the North Tributary 8 removal action was compared against previous modeling results as a quality assurance step.

The annual, administrative watershed-based schedule for CERCLA five-year reviews at the Oak Ridge National Priorities List site continued during FY 2025 with the submittal of the *2025 CERCLA Five-Year Review for the Bear Creek Valley Administrative Watershed on the U.S. Department of Energy Oak Ridge Site, Oak Ridge, Tennessee* (DOE/OR/01-2990&D1) in August 2025. The objective of the five-year review is to evaluate the success of completed CERCLA remedial actions in protecting human health and the environment. Also in FY 2025, OREM completed planning meetings for the upcoming 2027 CERCLA Five-Year Review for Clinch River/Poplar Creek and Lower Watts Bar Reservoir.

Through the annual Remediation Effectiveness Report, OREM continued to evaluate the effectiveness, based on environmental media monitoring, of completed remedial actions or environmental media removal actions as addressed in the *2025 Remediation Effectiveness Report for the U.S. Department of Energy Oak Ridge Site Oak Ridge, Tennessee* (DOE/OR/01-2989&D1).

Long-term performance monitoring of groundwater, surface water, sediment, and/or biological media (e.g., fish, biota surveys) to assess performance continues to demonstrate that completed remedial and removal actions are meeting their objectives. Baseline monitoring of watershed conditions and trends for those media will inform future decisions on the Oak Ridge National Priorities List site. Included in the Remediation Effectiveness Report is the annual verification that land use controls and engineered remedies are properly implemented for completed actions.

Public Involvement

The public is involved in cleanup decisions made by DOE. To keep the public informed, DOE provides information through a variety of outlets, including tours, meetings, briefings, conferences, media outreach, fact sheets, public notices, websites, social media, and various publications.

Media Day held for Alpha-2 project

OREM showcased the demolition progress underway at Y-12's Alpha-2 building during a media event in FY 2025. OREM coordinated with UCOR, Consolidated Nuclear Services, and the National Nuclear Security Administration to highlight the scale and importance of this cleanup project. Before demolition began, Alpha-2 was an 80-foot-tall structure measuring 325,000 square feet and covering 2.5 acres. OREM's cleanup work at Y-12 is transforming the site, making it safer, enabling modernization, and providing space for crucial new facilities.

Environmental Cleanup Update meeting held

OREM and UCOR hosted an Environmental Cleanup Update meeting in Kingston during FY 2025 to provide the public a status on current cleanup efforts and information on upcoming projects. The event featured a poster session with subject matter experts on hand to answer questions.

Advisory board encourages public input on DOE cleanup

The Oak Ridge Site Specific Advisory Board (ORSSAB) is a federally chartered volunteer citizens panel that provides independent advice and recommendations to the DOE Oak Ridge Office of Environmental Management. ORSSAB meetings provide DOE and regulators at the U.S. Environmental Protection Agency and the Tennessee Department of Environment and Conservation with a forum to communicate with and understand stakeholders' perspectives. Because all meetings are open to the public, it also serves as a venue for members of the community to express their views or ask questions.

In 2025, the board issued a recommendation on the site's budget request and discussed ongoing development of the planned new onsite waste disposal facility, the Environmental Management Disposal Facility (EMDF). Since 1995, ORSSAB has provided nearly 300 recommendations to OREM on all important aspects of the cleanup program, such as land use and reindustrialization; stewardship; cleanup standards, activities and budgets; and waste management. Every major record of decision developed under EM had ORSSAB involvement, and none of the final records of decision have been at odds with majority opinions.

Board members also support OREM efforts outside of meetings. This year members toured excess facilities around the Oak Ridge Reservation; gave input during Five Year Review meetings with agencies covering various ongoing cleanup project progress; and attended the opening of the William J. Wilcox Jr. K-25 Interpretive Center, which was part of several previous recommendations to DOE regarding historic preservation. Additionally, the board sent a representative to the Waste Management Symposia in Phoenix, Arizona. These opportunities allow members to bring back knowledge to improve their service to OREM. The board encourages interested individuals to apply for membership to receive additional insights into cleanup activities. Members tour the site, are offered opportunities to learn about other sites, and receive continuing education. The board conducts an annual recruitment event but welcomes applicants to submit their information at any time through its website.

ORSSAB may have up to 22 members. Individuals apply for membership and are selected annually by DOE to reflect the variety of residents in the multi-county area that surrounds the Oak Ridge Reservation. Technical expertise is not a requirement for membership, although some members may have those skills. DOE strives to have a good mix of educational backgrounds and experiences among members.

ORSSAB meets the second Wednesday of most months at 6 p.m. in Oak Ridge and virtually through Zoom. The board also has two standing committees. All meetings are open to the public and feature comment periods. Meeting videos are also posted to the board's YouTube channel, www.youtube.com/user/ORSSAB. Staff members maintain a social media presence at www.facebook.com/ORSSAB and publish a quarterly newsletter, the *Advocate*. More information about the board and its activities is available at www.energy.gov/orssab or email questions to orssab@orem.doe.gov.

ORSSAB members

Websites for Additional Information

DOE OREM Public Information
(865) 574-4912
www.energy.gov/orem

Oak Ridge Site Specific Advisory Board
(865) 241-4583, (865) 241-4584
1-800-382-6938
www.energy.gov/orssab

Tennessee Department of Environment and Conservation–DOE Oversight Office
(865) 481-0995
https://tdec.tn.gov/

U.S. Environmental Protection Agency
Region 4
1-800-241-1754
www.epa.gov/aboutepa/about-epa-region-4-southeast

Commonly Used Acronyms

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CPS	Continuous Purge System
DOE	U.S. Department of Energy
EM	Environmental Management
EMDF	Environmental Management Disposal Facility
EMWMF	Environmental Management Waste Management Facility
EPA	U.S. Environmental Protection Agency
ETTP	East Tennessee Technology Park
FY	Fiscal Year
IROD	Interim Record of Decision
MSRE	Molten Salt Reactor Experiment
NNSA	National Nuclear Security Administration
OREM	Oak Ridge Office of Environmental Management
ORNL	Oak Ridge National Laboratory
ORRL	Oak Ridge Reservation Landfills
ORSSAB	Oak Ridge Site Specific Advisory Board
ROD	Record of Decision
SSP	Self Sufficiency Parcel
TDEC	Tennessee Department of Environment and Conservation
TRU	Transuranic
TWPC	Transuranic Waste Processing Center
U-233	Uranium-233
WIPP	Waste Isolation Pilot Plant
WWSY	White WIng Scrap Yard
Y-12	Y-12 National Security Complex

DOE Information Center

The DOE Information Center is located at the Office of Scientific and Technical Information, Building 1916 – T1, 1 Science.gov Way, Oak Ridge, Tennessee 37831; Email: doeic@science.doe.gov; Hours: 8 a.m. to 5 p.m., Monday – Friday; http://doeic.science.energy.gov; Phone: (865) 241-4780

Commonly Used Terms

CERCLA

CERCLA: The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for hazardous waste releases at these sites, and established a trust fund to provide cleanup when no responsible party could be identified. The law, which governs cleanup operations on the Oak Ridge Reservation, authorizes two kinds of response actions: short-term removal actions, where actions may be taken to address releases or threatened releases requiring prompt response, and long-term remedial actions, which permanently and significantly reduce the dangers associated with releases or threats of releases. Long-term actions can be conducted at sites on the U.S. Environmental Protection Agency's National Priorities List, a listing of the nation's most hazardous waste sites. The Oak Ridge Reservation was added to that list in 1989.

FFA

Federal Facility Agreement: CERCLA requires an agreement between state and federal entities to guide cleanup work at CERCLA sites. For OREM, the parties of this agreement, called a Federal Facility Agreement, are DOE, the U.S. Environmental Protection Agency, and the Tennessee Department of Environment and Conservation. The Federal Facility Agreement for Oak Ridge was initiated in January 1992.

RmA

Removal Actions: Some cleanup activities on the Oak Ridge Reservation are conducted as Removal Actions under CERCLA. These actions provide an important method for moving sites more quickly through the CERCLA process. When a site presents a relatively time-sensitive, non-complex problem that can and should be addressed, a Removal Action would be warranted.

RA

Remedial Actions: Remedial actions are long-term response actions that seek to permanently and significantly reduce the risks associated with the release or threat of release of hazardous substances.

RI/FS

Remedial Investigation/Feasibility Study: The purpose of the remedial investigation/feasibility study (RI/FS) is to assess site conditions and evaluate alternatives to the extent necessary to select a remedy. Developing and conducting an RI/FS generally includes the following activities: project scoping, data collection, risk assessments, treatability studies, and analysis of alternatives. The scope and timing of these activities should be tailored to the nature and complexity of the problem and the response alternatives being considered.

ROD

Record of Decision: Under the CERCLA process, a Record of Decision (ROD) formally documents the selection of a preferred cleanup method after a series of steps, including an RI/FS. A preferred cleanup alternative is selected and presented to the public for comment in a Proposed Plan. EPA, the state, and the lead agency then select a remedy and document it in the ROD.

Fiscal Year: The 2025 fiscal year spans from Oct. 1, 2024, to Sept. 30, 2025.

For more information, please contact
the DOE Oak Ridge Public Affairs Office at (865) 574-4912.

OREM

Oak Ridge Office of Environmental Management

PROGRAM PLAN

FY 2022 to 2032

BIANNUAL UPDATE - FALL 2024

CONTINUING PROGRESS.
RESTORING THE ENVIRONMENT.
ENABLING MISSIONS.

U.S. DEPARTMENT OF ENERGY

TABLE OF CONTENTS

A MESSAGE FROM THE MANAGER

Dear colleagues and stakeholders:

We released the first edition of our current 10-year program plan in 2022, and we're excited to unveil the latest developments in this version.

Our organization updates this document every two years so appropriators, partners, and stakeholders can track the progress we've achieved toward our goals, objectives, and performance measures. These updates also help readers understand how we are using investments from Congress and advancing the environmental cleanup mission locally.

This plan has been a significant driver behind our success by providing employees a uniform vision. It established four ambitious cleanup goals that give our workforce a fixed target to pursue, and it serves as a measurable method to gauge and track our performance through 2032.

Through this direction, the 2,500 men and women who support the Environmental Management mission in Oak Ridge know our standard and expectations, and they work daily to reduce risks, improve safety, and remove barriers to new missions and economic opportunities in Oak Ridge.

We have already achieved significant progress since issuing our first edition two years ago. Crews have completed soil remediation at the East Tennessee Technology Park (ETTP), demolished two former reactors at the Oak Ridge National Laboratory (ORNL), and transferred land at the Y-12 National Security Complex (Y-12) to support important national security missions. Teams are also actively preparing many more facilities for demolition at ORNL and Y-12.

By the final edition, we will accomplish much more. We are scheduled to complete most of the remaining remediation and transfers at ETTP, eliminate all the uranium-233 inventory and debris transuranic waste at ORNL, transform ORNL's central campus, and begin the teardown of massive high-risk buildings at Y-12.

As you read this plan, you'll see several of our projects marked complete in this new edition, and we are up to the challenge to accomplish the others in the years ahead. Our leadership team does a tremendous job identifying and proactively planning for new opportunities. We also boast highly qualified and committed employees, unmatched community and contractor partnerships, and strong support from Congress. Together, these elements make Oak Ridge a special and unique site that is setting the standard for excellence within DOE's Environmental Management complex.

As I look at what we have accomplished in recent years, I'm eager to witness the transformation and new opportunities made possible to the Department of Energy and the community through our mission in the future.

Jay Mullis
Manager

OUR MISSION

The U.S. Department of Energy's (DOE) Oak Ridge Reservation occupies more than 32,000 acres within Anderson and Roane counties in East Tennessee. Three sites lie within its borders—they include the Y-12 National Security Complex (Y-12), Oak Ridge National Laboratory (ORNL), and East Tennessee Technology Park (ETTP).

DOE's Oak Ridge Office of Environmental Management (OREM) has cleanup responsibilities at all three of these sites. Its efforts are removing risks and hazards, enhancing safety, opening land for re-development, and modernizing campuses to enable important science and energy research and national security missions. To accomplish these outcomes, OREM's mission is three-fold.

PROTECT THE REGION'S HEALTH AND ENVIRONMENT

Our work enhances the health and safety of the region. At Y-12, we are tearing down deteriorated buildings and constructing infrastructure and advancing research to remove sources of mercury contamination from the environment. At ORNL, we are demolishing contaminated facilities, eliminating waste inventories, and removing radiological risks. Finally, at ETTP, we are in the final phase of cleanup focused on groundwater remediation.

ENABLE DOE'S NATIONAL SECURITY AND SCIENCE MISSIONS ONSITE

We are actively demolishing excess and contaminated buildings at Y-12. These projects are clearing land for the National Nuclear Security Administration to build new facilities that support important national security missions. Our cleanup at ORNL is removing dilapidated facilities and radiological risks to open land for DOE's Office of Science to continue advancing its world-leading research.

MAKE CLEAN LAND AVAILABLE FOR FUTURE USE

At ETTP, our work has transformed the former enrichment site into a multi-use industrial center, national park, and conservation area. We have successfully completed all building demolition and soil remediation and transferred more than 1,700 acres to the community for economic development that's attracting new investments and businesses to the region.

CORE VALUES

The leadership and employees in OREM adhere to a set of core values that have proven invaluable as we conduct and accomplish challenging cleanup across the three major cleanup sites. These values provide a clear standard that guide our workforce and contributes to the organization's successful operations and oversight.

The safety and security of our employees, local residents, and the environment is our highest priority

Our results will demonstrate accountability and value for taxpayers' investment

We will value and utilize the diversity, experience, and skills of our people

We will pursue innovation and continuous improvement in every aspect of our operations

We will promote openness, collaboration, and teamwork with our stakeholders

THE 10-YEAR PROGRAM PLAN

This plan builds on the successes our program has accomplished since it was formed in 1989. Over the decades, we have made incredible progress remediating contaminated soil and groundwater and demolishing radioactively contaminated facilities across the Oak Ridge Reservation (see Cleanup Accomplishments on page 11).

Contamination areas that once threatened the environment have been contained through early actions and institutional controls. Through the years, we have also removed radioactive and hazardous wastes and portions of nuclear material inventories that could pose risks to the public or DOE's ongoing missions.

This plan outlines our approach from fiscal year 2022-2032 to continue removing contaminated facilities, reducing waste inventories, and addressing impacted soil and groundwater on the Oak Ridge Reservation in a safe and cost effective manner. This work is protecting human and environmental health and ushering in a future with new opportunities for DOE, the City of Oak Ridge, and the region.

HISTORY AND BACKGROUND

The U. S. Army Corps of Engineers began acquiring land, in the area that became Oak Ridge, in October 1942 for the Manhattan Project. By March 1943, 56,000 acres were sealed behind fences and major industrial facilities were under construction.

The K-25, S-50, and Y-12 plants were all built to explore different methods to enrich uranium, while the X-10 site was established as a pilot plant for the Graphite Reactor and to explore how to produce plutonium. Throughout the following decades the three major sites— K-25 (present day ETTP), X-10 (present day ORNL), and Y-12— purified isotopes, conducted research, built weapons, and created environmental legacies that OREM is now cleaning and removing.

Above Left: East Tennessee Technology Park
Above: Oak Ridge National Laboratory
Left: Y-12 National Security Complex

EAST TENNESSEE TECHNOLOGY PARK

The K-25 plant was constructed during the Manhattan Project to enrich uranium for the first atomic weapon using the gaseous diffusion process. Due to the success of this technique, the original plant was expanded during the Cold War and employed 12,000 workers. At its peak, the site contained five enormous uranium enrichment facilities—K-25, K-27, K-29, K-31, and K-33— and hundreds of support facilities. DOE ceased all gaseous diffusion operations at the K-25 plant in 1987.

Environmental cleanup to address the deteriorating facilities and environmental hazards created during decades of uranium enrichment began shortly thereafter. In addition to conducting much needed cleanup, DOE pursued a vision to convert the site into a private industrial park by transferring land and infrastructure back to the community. The site was renamed the East Tennessee Technology Park in 1997. OREM has completed all demolition and soil remediation at ETTP. Remaining work includes completing groundwater, surface water, and sediment remediation, transferring cleaned land to the community for beneficial reuse, and transitioning the site to long term stewardship.

QUICK FACTS

Site manager: Office of Environmental Management and the Community Reuse Organization of East Tennessee

Size: 2,200 acres

Cleanup priority: Complete groundwater, surface water, and sediment remediation, transfer remaining federal land to the community for beneficial reuse, and transition site to long term stewardship.

EM value-added: The cleaned site offers an abundance of flat real estate and robust infrastructure to attract large industry to the region. OREM opened the K-25 History Center to share the stories of the men and women who built and operated the site, and construction is underway on the K-25 Viewing Platform to help visitors at the national park understand the scope of the former enrichment complex. OREM also created a 3,000-acre conservation easement adjacent to ETTP that protects wildlife and provides residents with nature-friendly trails.

Y-12 NATIONAL SECURITY COMPLEX

Y-12 was built during the Manhattan Project to enrich uranium for the first atomic weapon that ended World War II. After World War II, the site provided lithium separation and key components for the thermonuclear weapons that helped end the Cold War.

Today, the Y-12 National Security Complex is managed by NNSA. Y-12 is responsible for maintaining the safety, security, and effectiveness of the U.S. nuclear weapons stockpile, and its employees have extensive expertise in machining, handling, and protection of radiological materials. Y-12 is responsible for surveillance testing, which determines how weapons in the active stockpile are aging, and it is also charged with dismantlement, which involves separating components of retired weapons and recovering their nuclear materials. Safe and secure storage occurs throughout all these processes.

In addition, Y-12 works with other federal agencies to secure vulnerable nuclear materials internationally. Through NNSA's Global Threat Reduction Initiative, employees safely secure materials and transport them to Y-12 for ultimate storage or disposition. Finally, Y-12 provides highly enriched uranium to fuel reactors in the Navy's nuclear-powered aircraft carriers and submarines.

QUICK FACTS

Site manager: National Nuclear Security Administration

Size: 811 acres

Cleanup priority: Construct infrastructure to support mercury cleanup, remove large excess contaminated facilities, and address sources of mercury in the environment.

EM value-added: Removing mercury laden facilities and remediating soils and surface/groundwater eliminates risks, enhances safety, and opens land for modernization at one of DOE's most important national security sites.

OAK RIDGE NATIONAL LABORATORY

ORNL dates back to the Manhattan project, when it was previously known as X-10. Its first mission was to develop and test the experimental Graphite Reactor, which went critical in March 1944. It was also used as a pilot test facility for plutonium production.

13 reactors were designed and built onsite that developed numerous nuclear material reprocessing methods. In the 1960's, research into genetics and the biological effects of radiation were added to the site's mission. In the 1970's, ORNL began ecological and biological research of the impacts of nuclear power plants on the environment. During the 1980s and 1990s, the mission grew to encompass alternative energy and Strategic Defense Initiative research.

Today, ORNL is a state-of-the-art research complex at the forefront of supercomputing, advanced manufacturing, materials research, neutron science, clean energy, and national security that is managed by Office of Science.

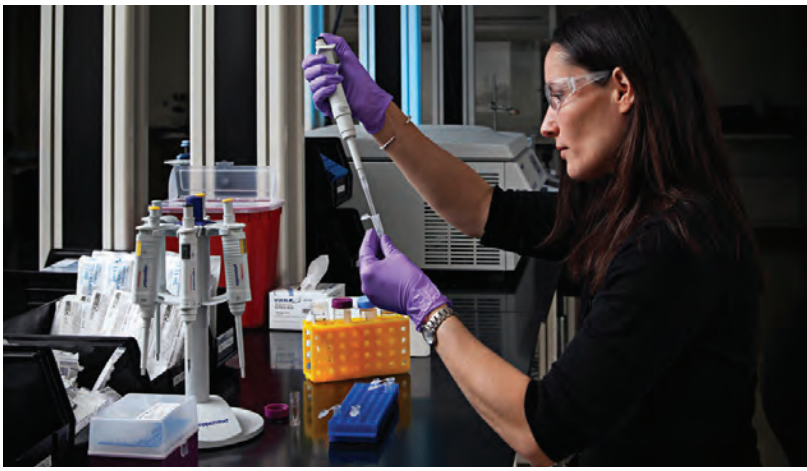
QUICK FACTS

Site manager: Office of Science

Size: 4,400 acres

Cleanup priority: Removing radiologically and chemically contaminated facilities and eliminating inventory of uranium-233 and transuranic waste.

EM value-added: Removing inventories of nuclear waste and deteriorated and contaminated facilities eliminates risks, enhances safety, and opens land for further modernization at one of DOE's most important science institutions.



REGULATORY FRAMEWORK

As a result of legacy contamination from past operations, in 1989, the U.S. Environmental Protection Agency (EPA) placed the Oak Ridge Reservation on the National Priorities List. The list names national priorities where there are known or threatened releases of hazardous substances. Since then, OREM performed extensive sampling that showed more than 19,000 of the 32,000 acres are clean, and they were eliminated from the list.

In 1989, DOE responded by establishing the Office of EM to oversee cleanup of hazardous materials at its facilities located across the U.S. Three years later, DOE, EPA, and the Tennessee Department of Environment and Conservation (TDEC), signed the Federal Facility Agreement, which establishes the guidelines and milestones for cleanup in Oak Ridge in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and other laws.

This tri-party agreement provides a checks and balances system to ensure the cleanup in Oak Ridge is prioritized and conducted in a way that best protects human health and the environment in the region. Members of each organization communicate and collaborate regularly as we plan and execute projects.

In recent years, we helped establish a new regulatory partnership framework with EPA, TDEC, and UCOR that resulted in Oak Ridge earning its position as the top performing federal cleanup site in the nation. The framework is designed to aid decision-making and approvals.

Management representatives serve on a leadership team and an emerging issues team that help reach resolution on issues unresolved on the staff level. The framework also includes project management representatives who serve on a project team. These teams are working to resolve regulatory challenges and improve communication so the agencies can make protective, timely cleanup decisions.

CLEANUP ACCOMPLISHMENTS

We have made significant progress cleaning up the Oak Ridge Reservation. While the transformation is ongoing, it is important to acknowledge the magnitude of the work that OREM has already accomplished. Since the EM program's inception, hundreds of facilities have been removed, environmental legacy sites have been remediated, and infrastructure to treat, process, and dispose of waste has been constructed.

Demolishing old, contaminated facilities

Our efforts have removed hundreds of facilities across ETTP, Y-12, and ORNL. We became the first site in the world to remove a former enrichment complex, which involved removing nearly 500 structures spanning a total footprint of 13 million square feet. Now, the trained, experienced crews responsible for this historic accomplishment are busy deactivating and demolishing excess contaminated facilities at Y-12 and ORNL. We anticipate removing more than 300 structures at those sites in the years ahead.

Waste treatment and removal

We have constructed and upgraded numerous waste treatment systems and facilities focused on removing legacy contamination and keeping sites safe. The TSCA Incinerator treated 35 million pounds of waste before it was taken down. The ORNL Liquid and Gaseous Waste Treatment System treats millions of gallons of process wastewater and over a billion cubic meters of gaseous waste annually. Additionally, we have removed half of the uranium-233 inventory stored at ORNL and started hot cell operations to process the remaining material. We have processed 98% of the legacy transuranic debris waste and are continuing to ship processed waste to WIPP.

Risk reduction

We have addressed and eliminated major hazards across the Oak Ridge Reservation including removing 6,000 cylinders of depleted uranium hexafluoride, emptying waste storage tanks, shipping all spent nuclear fuel offsite, excavating the greatest source of groundwater contamination at ORNL, and clearing contaminated scrap yards.

Addressing mercury

We have reduced offsite mercury migration from Y-12 and are actively investigating technologies that can effectively remove it from the environment. Our projects have eliminated some of the mercury sources from mercury contaminated tanks and facilities, cleaned storm drain systems, excavated contaminated soil, dredged sediments, re-routed and removed old process piping, and extracted more than 6.5 tons of mercury from old equipment. We are also constructing an onsite mercury treatment system that will capture and treat mercury contaminated water originating and mobilizing from major mercury cleanup areas at Y-12.

Groundwater monitoring and treatment

The safety of human health and the environment is our top priority. One of the ways we ensure that continues is through supporting groundwater protection for Oak Ridge. Our projects have addressed necessary groundwater actions, treated millions of gallons of water, and installed a vast collection of monitoring wells across the Oak Ridge Reservation to ensure safety and inform plume modeling for remedial action decisions. OREM now has regulatory decisions in place that provide guidance and approval to begin addressing groundwater plumes at ETTP, which will begin soon.

Innovative transportation

We constructed a dedicated road on DOE land to transport waste from cleanup sites to our onsite disposal facilities. This road prevents the potential for traffic accidents or spills on public highways. More than 200,000 truckloads have been diverted from local roadways. We have also developed advanced tracking systems to identify the location and contents of each truck while they are in transit.

Reindustrialization and economic development

We were the first DOE site to launch a reindustrialization program. To date, we have transferred more than 1,700 acres, 14 buildings, along with roadways, electrical, water and sewer systems, and emergency services. These transfers have saved taxpayers millions of dollars. Additionally, 25 private businesses have located or announced plans to build on these transferred parcels so far, bringing in $1.35 billion in investments and generating an anticipated 1,400 jobs to the region.

Public involvement and input

Since 1995, the Oak Ridge Site Specific Advisory Board has provided independent advice and recommendations to our cleanup program. The federally appointed citizens' advisory panel is comprised of 22 members that reflect the diversity of the region, and their active engagement and insight is invaluable as we formulate cleanup strategies and decisions. OREM will continue conducting robust outreach efforts and seek public input and involvement with major CERCLA-related cleanup decisions. We have also increased STEM outreach in the community, local schools, and colleges nationwide highlighting and promoting our mission and career opportunities. OREM also has a monthly news program that airs in 24 counties across the state.

Regulatory Decisions

Oak Ridge set the model for environmental regulatory collaboration, and those efforts have led to numerous key decisions and documents that allowed cleanup to advance across the reservation. Those decisions are allowing for the completion of cleanup at ETTP and the start of cleanup at ORNL and Y-12. We will continue strengthening our relationship with EPA and TDEC to complete the remaining decisions and documents required to support ETTP site closure and final remediation at ORNL and Y-12.

BALANCING PRIORITIES

We have a portfolio of projects designed to complete cleanup at ETTP, Y-12, and ORNL. All three portfolios are integrated into a single plan that balances risks from the perspectives of DOE, regulators, and stakeholders.

We have successfully completed most of the cleanup scope at ETTP. The remaining work involves completing groundwater remediation and activities that facilitate the site's transition to private ownership. Completing these efforts will allow the community to reuse the site for economic development, historic preservation, and conservation, leaving a small amount of acreage for long term stewardship.

With major fieldwork complete at ETTP, we have shifted our focus to the cleanup of Y-12 and ORNL. The hazards and challenges at Y-12 and ORNL are different than those we faced at ETTP. While EM is the landlord of ETTP, with full control over the site, we are only a tenant at Y-12 and ORNL. Crews had space and flexibility with cleanup projects at ETTP due to its open footprint and absence of enduring DOE missions at that site; however, crews must maneuver in smaller, confined footprints at Y-12 and ORNL as they conduct cleanup activities in close proximity to ongoing research and national security missions. It is also important to note that workers are addressing different hazards at each site—mercury at Y-12, radiological contamination at ORNL, and previously uranium at ETTP.

Our priority at Y-12 is the demolition of excess buildings and remediation of underlying soils and groundwater that are contaminated with mercury. Mercury continues to migrate into the Upper East Fork Poplar Creek, which enters public water at the site boundary. We are funding research and executing projects that will reduce mercury migration into waterways and address its sources.

Our priority at ORNL is the disposition of U-233 material and legacy transuranic waste, the demolition of excess facilities, and remediation of underlying soils and groundwater that have nuclear and radiological contamination from years of isotope production and reactor research.

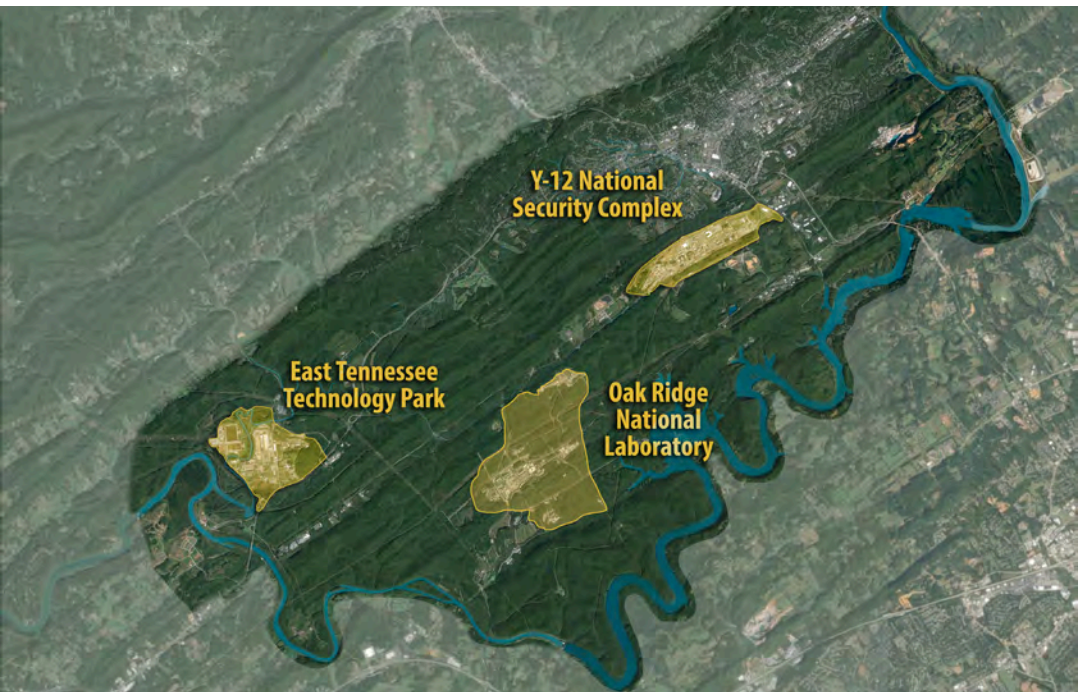
OREM uses the following criteria to prioritize its work within the constraints of annual appropriations across three sites that have different hazards and operating conditions:

1. **Eliminate any offsite releases**
2. **Prevent contamination from traveling offsite**
3. **Address sources of onsite contamination**
4. **Demolish aged, contaminated facilities**
5. **Address soil, groundwater, sediment, and surface water**

CHALLENGES AND CONSIDERATIONS

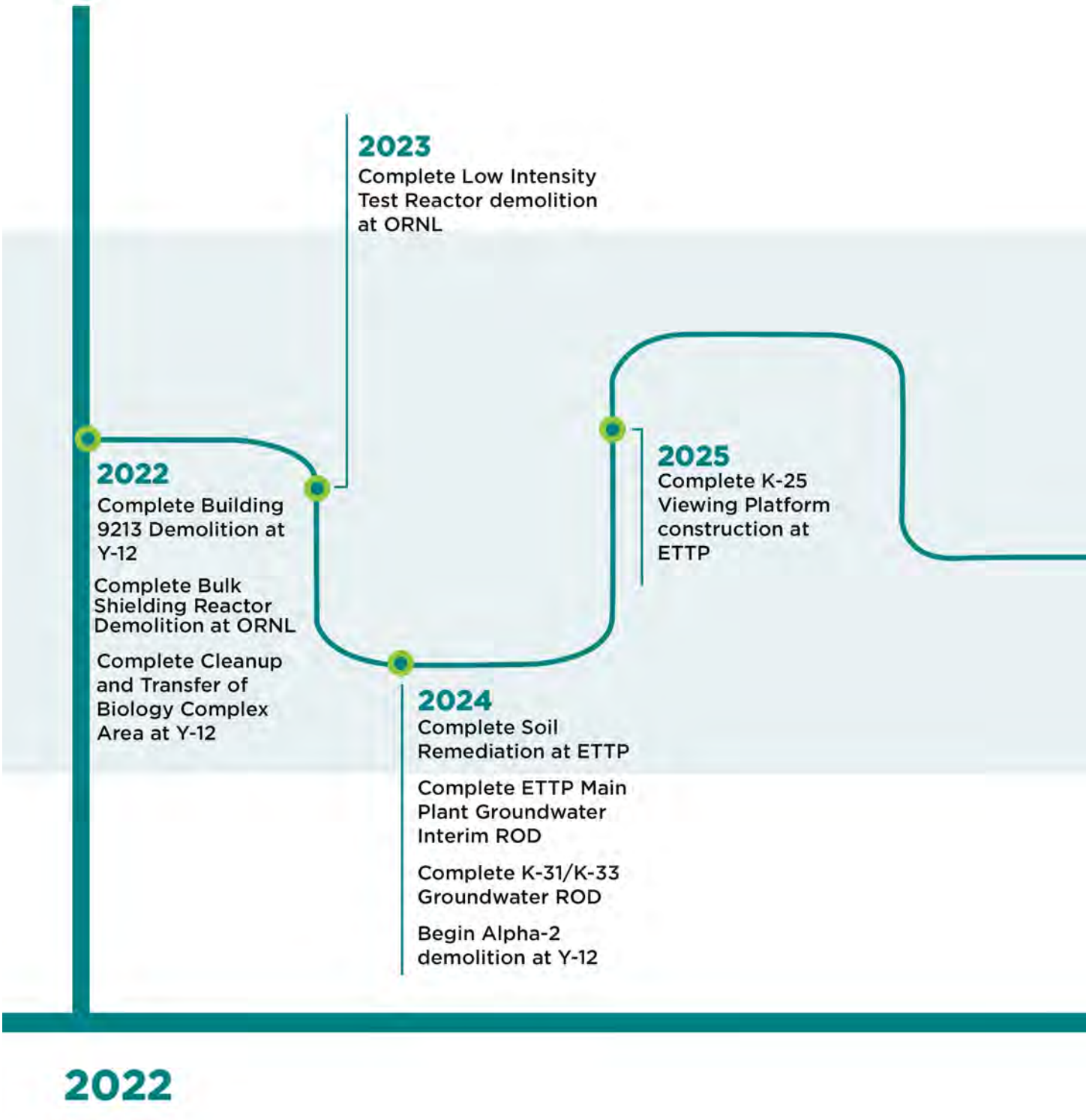
Oak Ridge has unique cleanup challenges. The Oak Ridge Reservation has three major cleanup sites, each owned by different programs with different operational histories, risks, physical, chemical and radiological hazards, footprints and ongoing missions.

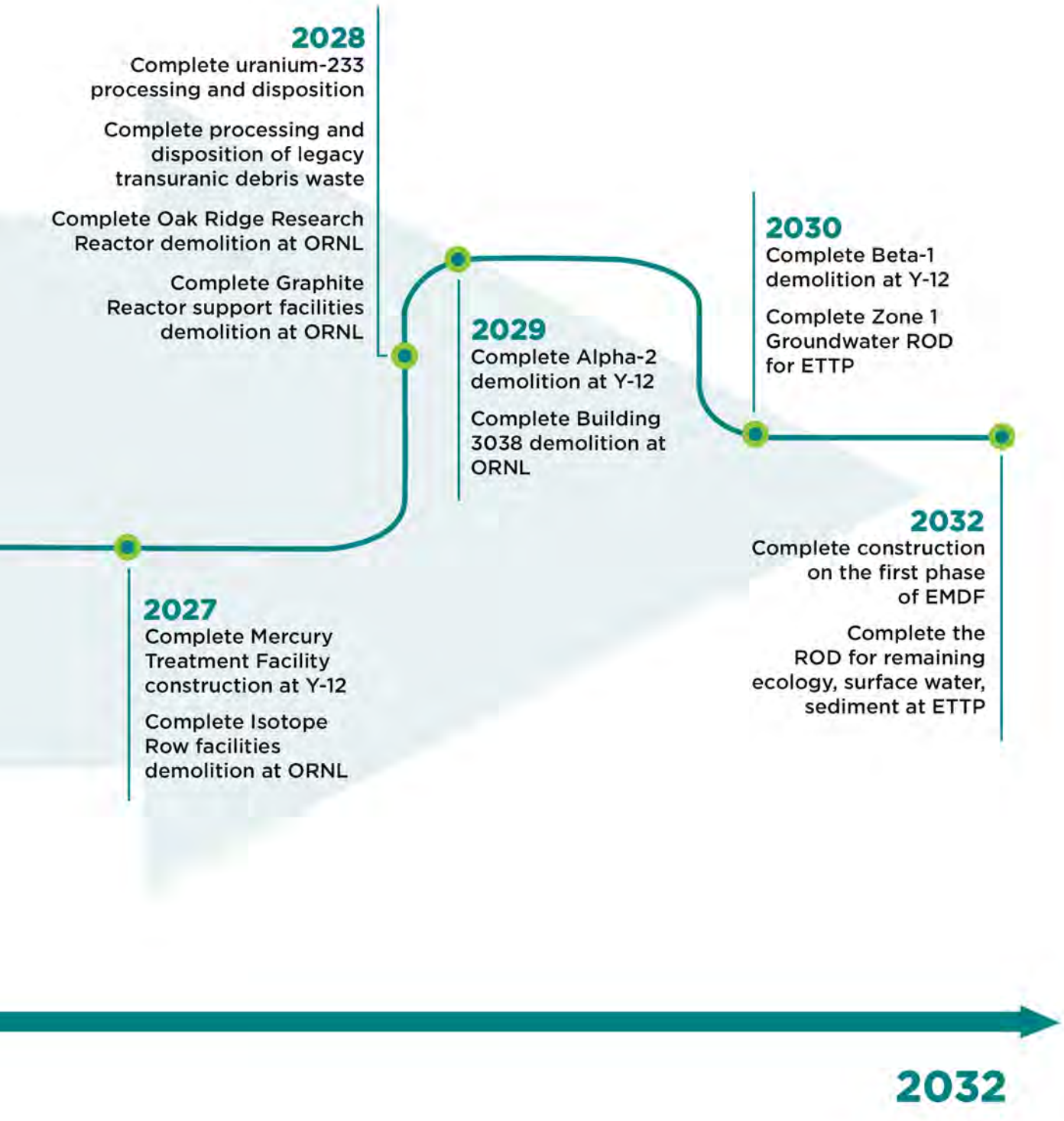
- More than 500,000 people live within a 30-mile radius of our cleanup, and the entire Oak Ridge Reservation is within the Oak Ridge city limits.
- Oak Ridge receives one of the highest annual rainfall levels of any site within the Environmental Management complex. It also has shallow groundwater capable of carrying contaminants into local waterways.
- The Department's largest inventory of high-risk excess contaminated facilities is at Y-12 and ORNL. These buildings present different hazards than crews experienced at ETTP.
- Since EM is a tenant at Y-12 and ORNL, EM work at these sites must be coordinated with the Office of Science and NNSA landlords.
- Cleanup at Y-12 and ORNL is conducted on confined footprints in close proximity to important ongoing research and national security missions. EM must ensure cleanup does not impact those missions.
- We must balance myriad risks and meet regulatory requirements across three sites within the constraints of Congressional appropriations while engaging a diverse group of stakeholders with differing priorities and expectations.



Above Left: *Satellite view of the Oak Ridge Reservation.* ***Top Right:*** *Anticipated cleanup scope at ORNL (labeled in red).*
Lower Right: *Anticipated cleanup scope at Y-12 (labeled in red)*

Decade Timeline 2022-2032




2028
Complete uranium-233 processing and disposition
Complete processing and disposition of legacy transuranic debris waste
Complete Oak Ridge Research Reactor demolition at ORNL
Complete Graphite Reactor support facilities demolition at ORNL
2029
Complete Alpha-2 demolition at Y-12
Complete Building 3038 demolition at ORNL
2030
Complete Beta-1 demolition at Y-12
Complete Zone 1 Groundwater ROD for ETTP
2032
Complete construction on the first phase of EMDF
Complete the ROD for remaining ecology, surface water, sediment at ETTP
2027
Complete Mercury Treatment Facility construction at Y-12
Complete Isotope Row facilities demolition at ORNL
2032

OUR GOALS

This section of the plan focuses on our primary goals through 2032. The timeline on the following pages highlights our major planned accomplishments during that span that will set us on a course to complete OREM's mission by 2047. We have established four goals, eight objectives, and numerous performance measures to help us track our progress over the next decade. These goals and measures are explained in more detail in the next section.

Goal 1: Complete ETTP cleanup and transition site to long-term stewardship

Objective 1: Complete all remedial actions consistent with CERCLA agreements

Objective 2: Complete reindustrialization, conservation, and historic preservation activities and transition site to long term stewardship

Goal 2: Reduce radiological risks at ORNL

Objective 1: Disposition uranium-233 inventory

Objective 2: Deactivate and demolish excess contaminated facilities in central campus

Objective 3: Disposition legacy transuranic waste inventory

Goal 3: Reduce environmental risks at Y-12

Objective 1: Deactivate and demolish high-risk excess contaminated facilities at Y-12

Objective 2: Build infrastructure and advance research to support mercury cleanup

Goal 4: Ensure adequate onsite waste disposal capacity to support remaining cleanup

Objective 1: Build and operate EMDF

PROGRESS ON THE ROAD TO 2032

GOAL 1: COMPLETE ETTP CLEANUP AND TRANSITION SITE TO LONG-TERM STEWARDSHIP

Objective 1: Complete all remedial actions consistent with CERCLA agreements

PERFORMANCE MEASURES:

- ☒ Complete soil remediation
- ☐ Complete regulatory agreements for groundwater
- ☐ Implement groundwater remedies
- ☐ Complete investigation for CERCLA decision on remaining ecology, surface water, and sediment remediation

When we first released this program plan in 2022, all demolition was complete at ETTP, but OREM was tasked with completing soil and groundwater remediation to finish our work under CERCLA. Since then, crews have been busy removing building slabs and soil impacted by previous operations beneath the footprint of the former structures, and they successfully completed that work in 2024. Initial estimates indicated approximately 100,000 cubic yards of soil would require excavation but that 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.

Crews excavated 500,000 cubic yards of soil at ETTP

Completing all the soil remediation eliminates risks and allows OREM to transfer the remaining federally owned parcels to the community to attract new businesses and economic development. In 2024, regulators also signed two Records of Decisions that provide the guidance and approval necessary to address groundwater in the Main Plant Area and the K-31/K-33 area at ETTP. Those decisions, along with two others under development, will be implemented to guide remediation for groundwater, surface water, and sediment to complete our cleanup mission at ETTP.

The largest dig at ETTP, known as Exposure Unit 21, occurred on the K-25 footprint

Objective 2: Complete reindustrialization, conservation, and historic preservation activities and transition to long term stewardship

PERFORMANCE MEASURES:

- ☐ Complete all activities to preserve the historical significance of K-25
- ☐ Transfer all applicable economic development parcels to the community
- ☐ Transfer all applicable conservation parcels to the State of Tennessee
- ☐ Complete closure activities and transition to long-term stewardship

OREM is successfully achieving its ambitious vision to transform the former enrichment complex into a multi-use industrial center, national park, and conservation area. We have transferred more than 1,700 acres for economic development, opened a history center, and signed an agreement to transfer nearly 3,500 acres of scenic East Tennessee land to the Tennessee Wildlife Resources Agency for conservation and recreational uses.

We are continuing efforts to complete our commitments listed in the multi-party agreement to preserve the historical significance of K-25, which includes constructing the K-25 Viewing Platform. Construction is progressing, and it is scheduled to open to the public in 2025.

OREM is also intently focused on transforming the site into an economic engine for the region. Our reindustrialization efforts are giving new life to infrastructure and land that are no longer needed by DOE by transferring them to the community and the City of Oak Ridge.

Since the last update, reindustrialization efforts have continued to expand at ETTP. 25 private businesses have located or announced plans to build on these transferred parcels so far, bringing in $1.35 billion in investments and generating an anticipated 1,400 jobs to the region. With major cleanup complete, the development potential is more apparent, and interest has grown to locate and invest at the site.

With soil cleanup complete, OREM is working to transfer the remaining economically viable parcels of land to the community for reuse. Plans are also underway to transfer conservation areas to the Tennessee Wildlife Resources Agency.

Rendering of Kairos Power's Hermes demonstration reactor

Construction progress on the K-25 Viewing Platform

Cleanup has transformed ETTP

GOAL 2: REDUCE RADIOLOGICAL RISKS AT ORNL

Objective 1: Disposition uranium-233 inventory stored at ORNL

PERFORMANCE MEASURES:

- ☒ Complete facility upgrades necessary to begin processing operations in Building 2026
- ☐ Downblend and disposition all remaining U-233 inventory
- ☐ Transition Building 2026 and 3019 for decommissioning and deactivation

While approximately half of the U-233 inventory stored at ORNL was able to be disposed of without processing, the remaining material requires processing to convert it into a form that can be shipped and disposed offsite. Eliminating this material is OREM's highest priority at ORNL since it drives the security posture at the site.

The campaign to process this material is steadily moving forward. Employees began processing the remaining U-233 inventory in hot cells in October 2022, and now they have processed more than 125 canisters of high dose material. Processing and disposition of the remaining material is expected to be completed by 2028.

The removal of the U-233 inventory from ORNL will save significant annual funds dedicated to keeping the material safe and secure, reduce the security posture of ORNL, and allow OREM to decommission and deactivate Building 3019, which is the oldest operating nuclear facility in the world.

This project is also benefiting the medical field. Employees are extracting medical isotopes as they process the material that are supporting next generation cancer treatment research.

Teams move downblended U-233 material using an air pallet

Employees load a canister of U-233 into a hot cell for processing

Processed U-233 is loaded for shipment and diposal

Objective 2: Deactivate and demolish excess contaminated facilities in ORNL's central campus

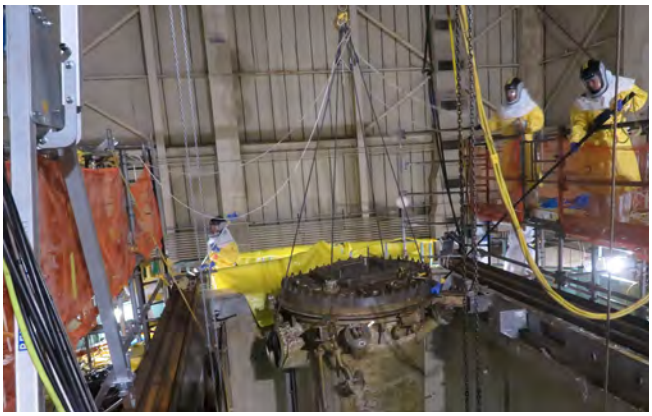
PERFORMANCE MEASURES:

- ☐ Demolish Building 3026 Hot Cells
- ☒ Demolish Low Intensity Test Reactor (Building 3005)
- ☒ Demolish Bulk Shielding Reactor (Building 3010)
- ☐ Demolish Oak Ridge Research Reactor (Building 3042)
- ☐ Demolish Graphite Reactor support facilities (Buildings 3002, 3003, 3018)
- ☐ Demolish Radioisotope Laboratory (Building 3038)
- ☐ Demolish Isotope Area Facilities (Buildings 3029, 3030, 3031, 3032, 3033, 3033A, 3034, 3036, 3093, and 3118)

ORNL is DOE's largest multi-program national laboratory, and it is one of the nation's most important research assets. While researchers there are conducting world-leading research in modern facilities on the east and west ends of campus, there are numerous deteriorated and contaminated former research reactors and excess isotope production facilities in the heart of the ORNL campus that date back to the 1950s.

OREM is tasked with safely deactivating and tearing down these facilities without impacting nearby science missions. Crews are making significant progress deactivating and demolishing these excess contaminated facilities in ORNL's central campus.

Crews have completed demolition on the Bulk Shielding Reactor and Low Intensity Test Reactor, and they are actively preparing the Oak Ridge Research Reactor, Graphite Reactor support facilities, and Building 3026's final hot cell for near-term demolition. Together, these projects eliminate risks at the site, clear land for future research missions, and enhance access to the Graphite Reactor – which is a component of the Manhattan Project National Historical Park. Crews will then turn their focus to demolish Isotope Row facilities and Building 3038.



Teams remove the reactor vessel from the Oak Ridge Research Reactor

Workers take down the Low Intensity Test Reactor

Crews deactivate the Experimental Gas Cooled Reactor

Objective 3: Disposition legacy transuranic waste inventory

PERFORMANCE MEASURE:

- ☐ Complete processing of legacy remote-handled and contact-handled debris transuranic waste
- ☐ Complete shipping legacy remote-handled and contact-handled debris transuranic waste to the Waste Isolate Pilot Plant
- ☒ Complete testing using the Mock Test Sludge Processing Facility

Dispositioning the legacy transuranic debris waste is an important component of Oak Ridge's cleanup mission. The legacy transuranic debris waste is being processed at the Transuranic Waste Processing Center located at ORNL.

We are in the final stages of processing and certifying the small percentage of Oak Ridge's remaining inventory of legacy debris contract-handled and remote-handled transuranic waste. The processed and certified transuranic waste is steadily being shipped out of state for disposal at the Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico.

Employees inspect TRU debris waste during processing operations

There are also 400,000 gallons of transuranic sludges stored in underground tanks at ORNL. Our commitment to regulators is to remove all of this waste from Oak Ridge. Since the last update, we have tested critical technology elements at our Mock Test Facility to gather the data necessary to develop plans on how to address the inventory of transuranic sludges in future years.

Processed TRU waste is ready for shipment to WIPP

Workers load processed TRU waste into a shipping cask

GOAL 3: REDUCE ENVIRONMENTAL RISKS AT Y-12

Objective 1: Deactivate and demolish high-risk excess contaminated facilities at Y-12

PERFORMANCE MEASURE:

- ☒ Demolish Old Criticality Experiment Lab (Building 9213)
- ☒ Remediate and turnover footprint of Biology Complex to NNSA
- ☐ Demolish Alpha 2 Complex
- ☐ Demolish Beta-1 Complex
- ☐ Demolish Beta-4 Complex

Since the last update, crews have made considerable progress at the Y-12 National Security Complex. OREM completed the cleanup and transfer of the former Biology Complex footprint to the National Nuclear Security Administration to begin construction on its new Lithium Processing Facility. Workers have also started demolition on the Alpha-2 complex. This is a significant milestone that marks the first removal of a former enrichment facility at Y-12.

Crews have also advanced deactivation in Beta-1 and Alpha-4, former Manhattan Project-era enrichment facilities. These excess contaminated structures pose risks at the site and stand on land that can be reused to support national security missions in the future.

Crews cleaned out the old, rusted, mercury-contaminated Column Exchange (COLEX) equipment on the exterior of Alpha-4. This activity retrieved nearly seven tons of mercury and reduced a major threat to the environment. Crews have also tested decontamination methods to clean old mercury process piping and field tested a newly developed fogging fixative and application process aimed at controlling mercury vapors during future deactivation and demolition projects at Y-12. Technologies like these will be essential as we continue tackling the heavily mercury contaminated buildings Alpha-4, Alpha-5, and Beta-4.

Cleanup of Alpha-5 and Beta-4 are dependent on NNSA's West End Protected Area Reduction Project. That project will reroute portions of the high-security area around Y-12's mercury-contaminated buildings, allowing access for cleanup crews without having to ingress and egress through a high-security area.

NNSA breaks ground on its new Lithium Processing Facility

EM is tasked with demolishing numerous excess contaminated facilities, like these, at Y-12

Crews demolish Building 9213

Objective 2: Build infrastructure and advance research to support mercury cleanup

PERFORMANCE MEASURE:

- ☐ Complete construction and begin operations of the Outfall 200 Mercury Treatment Facility
- ☐ Support technology development for future mercury cleanup

The Mercury Treatment Facility is designed to treat up to 3,000 gallons of surface water per minute and store 2 million gallons of excess stormwater. It will be comprised of two components at two locations — a headworks facility and a treatment plant— connected by a half mile pipeline. The headworks facility will capture creek flow, store excess stormwater collected during large rainfalls, remove grit, and pump water through the pipeline to the treatment plant. The treated water will then flow back into the creek. Construction in progressing on both the treatment facility and headworks facility.

Construction progress on the headworks facility

Mercury cleanup at Y-12 is one of OREM's highest priorities, and our ongoing research is positioning us for future success. We developed a Comprehensive Mercury Technology Development Plan and a Strategic Plan that serves as a roadmap for what must occur to complete the mercury cleanup at the site. This plan includes supporting research at ORNL's Aquatic Ecology Laboratory. Researchers there are expanding our understanding of mercury in the environment, advancing technology development, and identifying solutions for future remediation of the East Fork Poplar Creek.

Construction progress on the treatment facility

We completed an expansion of the Aquatic Ecology Laboratory that enables new research capabilities. The expansion allows actual mercury-contaminated water from local streams to flow through the facility so researchers can test mercury removal technologies in a real-life setting. This first-of-a-kind capability will help researchers discover which technologies will offer the most effective remediation results. This research is helping us gain a deeper understanding of the local environment and find new tools that will be more effective in addressing the complex mercury challenge at Y-12.

Researchers gather samples from the East Fork Poplar Creek to advance mercury-related studies

GOAL 4: ENSURE ADEQUATE ONSITE WASTE DISPOSAL CAPACITY TO SUPPORT REMAINING CLEANUP

Objective 1: Build and operate EMDF

PERFORMANCE MEASURES:

- ☒ Finalize Record for Decision for EMDF
- ☐ Finalize design for EMDF
- ☐ Construct first phase of EMDF

The Environmental Management Waste Management Facility, Oak Ridge's current onsite CERCLA disposal facility, is more than 85% full, and it is expected to reach its full capacity in the late 2020's.

OREM needs another low-level onsite disposal facility, known as the Environmental Management Disposal Facility (EMDF), to provide the disposal capacity required to complete cleanup at Y-12 and ORNL. This project is vital to the success of the other projects and goals listed in this Program Plan. EMDF will provide the infrastructure to enable the cost effective and efficient cleanup of Y-12 and ORNL.

Early site prep is complete, and the future footprint of EMDF is taking shape

We have worked collaboratively with the EPA and the State of Tennessee and engaged the public on our data based and science-driven approach that ensures a safe and protective design for the proposed engineered disposal facility. DOE, EPA, and the State signed a final Record of Decision in 2022. With that approval in place, OREM broke ground on the EMDF project in 2023. Since then, crews have completed early site prep. They completed that work five months ahead of schedule and more than $13 million under budget.

Now, the second phase of the project, known as the groundwater field demonstration study, is underway. 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. OREM is scheduled to begin monitoring groundwater elevations in December 2024.

A LOOK TOWARD THE FUTURE

While our cleanup is scheduled to continue through 2047, completing the goals identified in this plan will significantly alter the landscape across the Oak Ridge Reservation and create impactful opportunities for the community.

By 2032, we will be in the final stages of remediation at ETTP and achieving our vision of transforming the former uranium enrichment site into a multi-use industrial center, historic park, and conservation area. Major changes will also be visible at ORNL and Y-12. Crews will clear away many of the old reactors and labs in ORNL's central campus to make room for expanding research missions. At Y-12, infrastructure will be completed that allows us to address sources of mercury contamination, and workers will be in the midst of taking down some of largest high-risk buildings at the site.

We will also achieve major progress toward eliminating inventories of nuclear material and waste currently stored at the site. Employees will finish processing and dispositioning the inventory of uranium-233 stored at the world's oldest operating nuclear facility located at ORNL. Also, we will have completed the processing and removal of all legacy transuranic debris waste from Oak Ridge.

Our contributions are transforming the site by removing barriers to economic development, eliminating risks, and opening land for important ongoing missions that are benefiting our nation. Every day, we are working toward our vision of a clean, modernized Oak Ridge that is poised to provide solutions to the nation's pressing needs.

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Fall 2024

Additional Training and Research

- ORSSAB Meeting Recordings are available online at www.youtube.com/user/ORSSAB
- Training videos and a digital version of this orientation manual are available online at www.energy.gov/orem/orssab-new-member-education

  1. EM Complex Overview and Long-term Stewardship of Contaminated Areas on the Oak Ridge Reservation
  2. Risk Training Workshop – July 2008
  3. Federal Advisory Committee Act Presentation

- The DOE Information Center's current collection has more than 40,000 documents consisting of technical reports and historical materials that relate to DOE operations. These include the Administrative Record, Freedom of Information Act requested records, National Environmental Policy Act, and other publicly accessible documents. The DOE Information Center provides public access to the Oak Ridge Reservation's Administrative Record under the Comprehensive Environmental Response, Compensation, and Liability Act.

  To search DOEIC's online catalog or to request a record, visit https://doeic.science.gov/

- ORSSAB meeting materials, including meeting packets, minutes, prior Recommendations, and more, are available online at www.energy.gov/orssab