Oak Ridge

Overview

The Oak Ridge Site, located in eastern Tennessee, is one of the three original sites in the Manhattan Project. The U.S. Army Corps of Engineers began acquiring land in the area in October 1942. By March 1943, 56,000 acres were sealed behind fences and major industrial facilities were under construction. The K-25 and Y-12 plants were 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 methods for the production of plutonium.

Throughout the following decades, the three sites — K-25 (present day East Tennessee Technology Park (ETTP)), X-10 (present day Oak Ridge National Laboratory (ORNL)), and Y-12 — purified isotopes, conducted advanced research, manufactured weapons components, and enriched uranium. These activities created environmental legacies that placed the Oak Ridge Reservation on the Environmental Protection Agency's (EPA) National Priorities List in 1989.

The Oak Ridge Office of Environmental Management (OREM) is the responsible for of ETTP, and it is also responsible for the CERCLA cleanup at Y-12 and ORNL. OREM has achieved significant risk reduction across the Oak Ridge Reservation, including the removal of all facilities at ETTP. Now, the next chapter of cleanup is underway in Oak Ridge.

With demolition complete at ETTP, OREM transitioned the skilled, experienced workforce from there to address the many high-risk facilities at ORNL and Y-12. Demolition prep and deactivation work is underway at numerous buildings at those sites. OREM's work will address DOE's largest inventory of high-risk, excess contaminated facilities (former research reactors, isotope production facilities, and former process buildings); eliminate the site's remaining inventory of uranium-233; remediate areas with dense mercury contamination; and provide valuable real estate for the National Nuclear Security Administration (NNSA) and the Office of Science (SC) missions.

Throughout all this work, OREM works to keep the surrounding communities in Anderson and Roane counties and the city of Oak Ridge safe and informed. The program also fosters and maintains strong partnerships focused on economic opportunities including the East Tennessee Economic Council, Energy Technology and Environmental Business Association, Chamber of Commerce, and the Community Reuse Organization of East Tennessee. OREM airs a news program to raise awareness about the full scope of its mission and impact. This program airs weekly in 24 counties across Tennessee, and it is also available on OREM's YouTube channel. Additionally,

OREM achieved another EM priority in 2023 by beginning early site preparation for the Environmental Management Disposal Facility.

OREM leadership provides updates and is available to answer the public's questions at monthly Oak Ridge Site Specific Advisory Board meetings and at other organized public events. OREM representatives also regularly correspond with local city and county officials.

Calendar Year 2023 Accomplishments

- **Completed demolition of the Low Intensity Test Reactor — an EM 2023 priority**
- **Began early site preparation for the Environmental Management Disposal Facility (EMDF) — an EM 2023 priority**
- **Released two draft Records of Decision about groundwater for public comment**
- **Broke ground on the K-25 Viewing Platform at ETTP**
- **Forged new partnerships to aid workforce development**

Planned Cleanup Scope 2024–2034

Over the next 10 years, OREM expects to make significant progress on cleanup activities at Y-12 and ORNL. These projects will enable important ongoing NNSA and SC missions and eliminate one of the largest remaining security risks at ORNL.

OREM successfully completed demolition at ETTP in 2020. OREM has made significant progress addressing areas with impacted soil at ETTP, and it is slated to complete that in 2024. By 2028, OREM plans to implement all required groundwater treatment remedies, transfer all economically viable parcels of land to the community for reuse, and transfer conservation areas to the Tennessee Wildlife Resources Agency. By 2029, all remaining portions of ETTP will transition to long-term stewardship.

Large scale cleanup operations are firmly underway at ORNL and Y-12. In 2023, crews tore down the Low Intensity Test Reactor at ORNL. That project marked the second reactor demolition within the span of a year in ORNL's central campus. OREM also continued deactivation at numerous high-risk facilities, including multiple former enrichment facilities at Y-12 and former reactors and isotope labs at ORNL.

In 2024, OREM is scheduled to begin demolition of Alpha-2 at Y-12. That project is an important milestone because it is the first former enrichment facility crews will take down at Y-12. OREM will also continue removing inventories of nuclear and transuranic waste this year. Teams are actively processing and dispositioning the inventory of high-dose uranium-233 and shipping Oak Ridge's inventory of transuranic (TRU) debris waste.

In 2025, the Outfall 200 Mercury Treatment Facility is planned to be operational at Y-12. The facility will be able to treat 3,000 gallons of water per minute, and it will include a two-million-gallon storage tank to collect stormwater. It is a key piece of infrastructure that will enable OREM to begin large-scale mercury cleanup at Y-12.

By 2027, OREM expects to complete several other demolition projects in ORNL's central campus, including the East Cell Bank at the former Radioisotope Development Lab and the Isotope Row facilities. Additionally, demolition will be complete at the former Manhattan Project-era Alpha-2 facility.

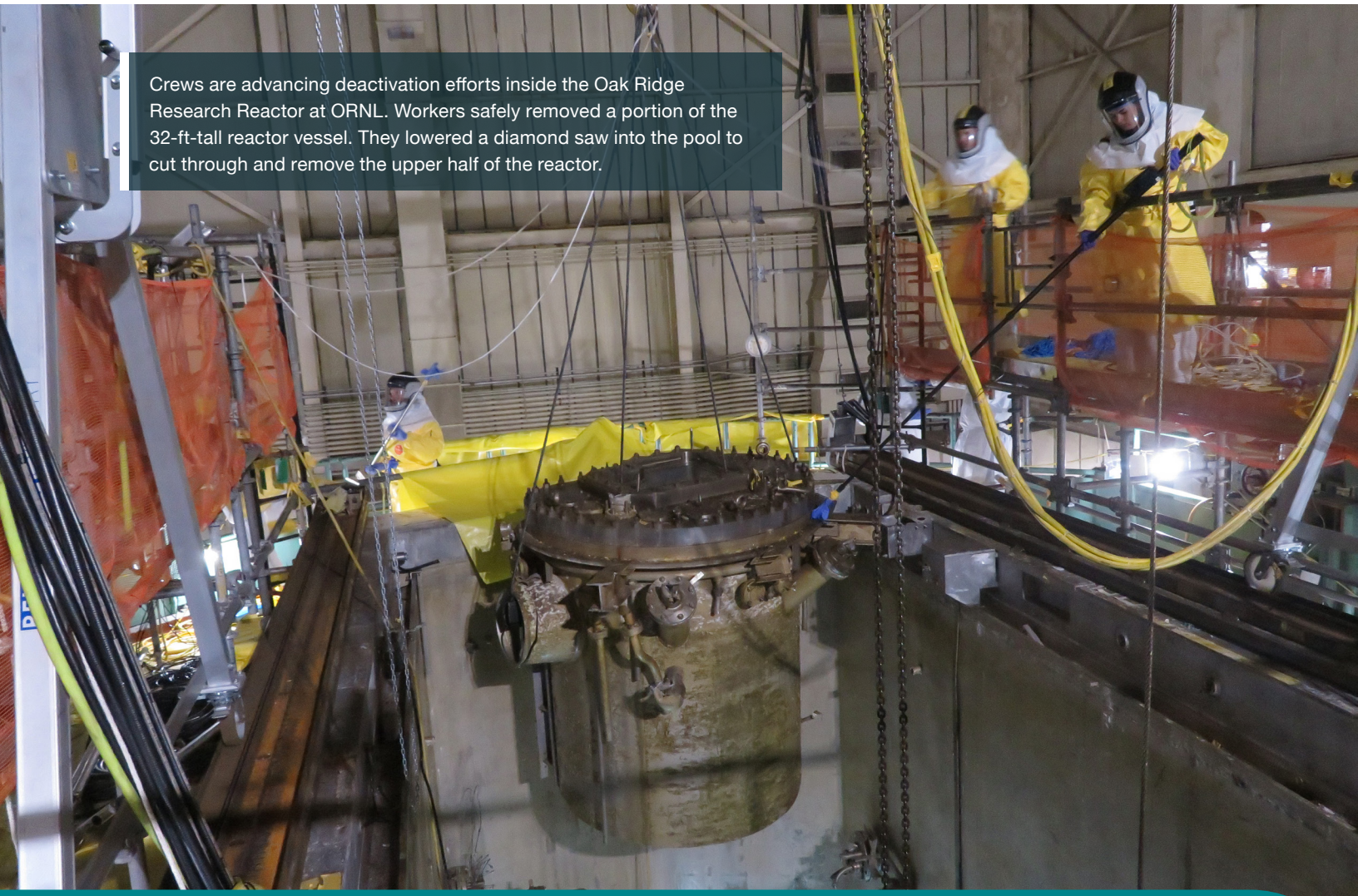
OREM is expected to finish processing, downblending, and disposing the remaining inventory of uranium-233 stored at ORNL by 2028. This is EM's highest priority at ORNL because it drives the security posture of the site. The completion of this project will significantly reduce risks and security costs, and it will enable deactivation of the world's oldest operating nuclear facility located in the heart of ORNL. All of the processing and shipments of Oak Ridge's inventory of legacy TRU debris waste will also be completed that year. This inventory includes both contact-handled and remote-handled waste.

In 2032, OREM expects to complete construction on the first phase of the new EMDF. This crucial facility will provide the on-site waste disposal capacity for low-level waste generated from completing cleanup at ORNL and Y-12.

Key Regulatory Milestones 2024–2034

Cleanup of the Oak Ridge Reservation is governed by a Federal Facility Agreement between DOE, EPA, and the Tennessee Department of Environment and Conservation. This agreement establishes the guidelines and milestones for cleanup in Oak Ridge in accordance with CERCLA and other laws.

- Complete Bulk Shielding Reactor demolition at ORNL — 2024
- Completion Low Intensity Test Reactor demolition at ORNL — 2024
- Complete Graphite Reactor support facilities demolition at ORNL — 2025
- Complete Isotope Row facilities demolition at ORNL — 2025
- Complete Building 3038 demolition at ORNL — 2026
- Complete the Record of Decision (ROD) for Zone 1 groundwater plumes at ETTP — 2026
- Complete the ROD for remaining ecology, surface water, sediment at ETTP — 2026



Crews are advancing deactivation efforts inside the Oak Ridge Research Reactor at ORNL. Workers safely removed a portion of the 32-ft-tall reactor vessel. They lowered a diamond saw into the pool to cut through and remove the upper half of the reactor.

Post-2034 Cleanup Scope

At Oak Ridge, the remaining work will focus on completing cleanup at ORNL and Y-12. This will include deactivating and demolishing the remaining excess contaminated facilities, remediating soil and groundwater, and addressing source contamination. OREM will also work to address the 400,000 gallons of TRU sludge stored on-site and operate the program's waste treatment and disposal facilities.

Crews will begin demolition on the 325,000-sqaure-foot Alpha-2 facility in 2024. It marks the first teardown of a former uranium enrichment facility at Y-12.