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 will coordinate 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 125 excess facilities (30+ are high risk)

Remediate contaminated soil, water and infrastructure

Modernize ORNL to enable future science and energy missions

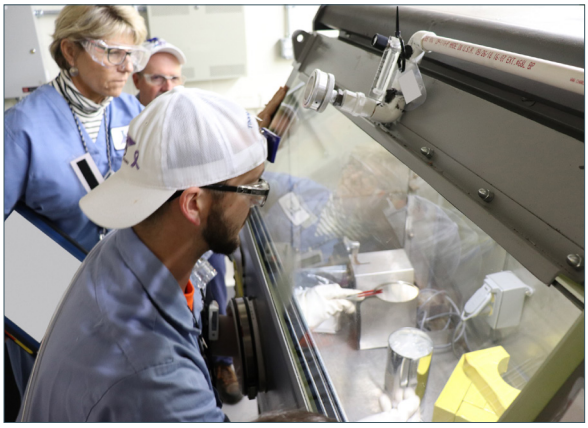
CLEANUP PROJECTS

FACILITY DECOMMISSIONING AND DEMOLITION (D&D)

125 building D&D projects are planned at the ORNL site, including more than 30 buildings 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

Crews are actively addressing numerous facilities in ORNL's central campus area, which houses aging, former research reactors and isotope production labs. After installing a six-story protective cover to protect against potential impacts, workers are now tearing down the two remaining contaminated structures that were part of Building 3026. Deactivation is underway in three former research reactors—the Low Intensity Test Reactor, the Bulk Shielding Reactor, and the Oak Ridge Research Reactor, and teams are moving the Experimental Gas-Cooled Reactor to the 'cold and dark' state. OREM is also deactivating nine isotope research and productions labs this year. Together, these projects are paving the way for the next wave of demolitions that will remove risks and clear land for research missions at DOE's largest multi-program national laboratory.



REMOVING INVENTORY OF HIGHLY ENRICHED FISSLE MATERIAL

OREM has removed approximately half of the inventory of uranium-233 stored in ORNL's Building 3019, which is the oldest operating nuclear facility in the world. Removing the rest of the highly enriched fissile material is the highest cleanup priority at ORNL, but first the material requires processing and downblending to convert it into a disposal-ready form.

Workers are currently using gloveboxes to process the low dose inventory. Part of this process involves extracting valuable medical isotopes that the private sector is using to advance next generation cancer treatment research. In 2021, OREM will complete the facility upgrades needed to begin processing and downblending the high dose portion of the inventory. This will mark a major step forward in this crucial project.