

CLEANUP PRIORITIES FOR THE Y-12 NATIONAL SECURITY COMPLEX



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 will coordinate 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, achieve a smaller, modernized 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 90 excess facilities (25+ are high risk)



Remediate contaminated soil and water



Modernize Y-12's footprint



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CLEANUP PROJECTS



FACILITY DECOMMISSIONING AND DEMOLITION (D&D)

D&D projects at Y-12 encompass 90 total buildings, including more than 25 that are categorized as high risk. Three buildings will be decontaminated/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 by initiating numerous deactivation projects at Y-12. The largest projects involve two Manhattan Project-era facilities, Alpha-2 and Beta-1, that have a combined footprint of more than half a million square feet. Workers are also continuing to retrieve mercury and deactivate the Column Exchange process equipment located at Alpha-4. So far, crews have retrieved more than 10,000 pounds of mercury from the dilapidated equipment that was installed in the 1950s and operated through the 1960s. This effort has 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 in the mid-2020s, 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 EPA and State of Tennessee requirements.



DEMOLITION UNDERWAY

Demolition crews are altering Y-12's skyline in a major way with the removal of the Biology Complex. In late 2020, workers began tearing down the three-story 65,000 square foot Building 9210. With that work complete, they are moving to demolish the final structure—the six-story, 256,660-square-foot Building 9207.

The Biology Complex, which was originally comprised of 11 buildings, was vacant for many years and experienced severe deterioration. Due to its structural condition, the buildings were categorized as high-risk excess contaminated facilities. By eliminating these structures, OREM is enhancing safety and clearing 18 acres of land that can be used for national security missions.



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