324 Building Disposition Project

The U.S. Department of Energy and contractor CH2M HILL Plateau Remediation Company are safely and compliantly managing the 324 Building at the Hanford Site in southeast Washington state and preparing to remediate the highly contaminated soil beneath the building.

Background

The 324 Building supported research on highly radioactive materials. Demolition operations were postponed in 2010 after workers discovered significant contamination under a portion of the building that likely came from a previous spill of highly radioactive waste within the facility. Removing that contamination to allow for the eventual demolition of the building is a top priority for the Department of Energy (DOE) and CH2M HILL Plateau Remediation Company (CHPRC) due to the close proximity of the Columbia River and the city of Richland.

The building operated from 1966 to 1996 and is located in Hanford’s 300 Area, where uranium fuel manufacturing operations and research facilities were located. These facilities supported the former mission of producing materials for nuclear weapons. Many of the contaminated buildings and sites with waste and contaminated soil resulting from work conducted in the 300 Area have been cleaned up.

Hazards

In addition to the high levels of radioactive contamination, workers must reinforce the building’s foundation to ensure the facility remains stable during the excavation of the contaminated soil beneath the building. Additionally, the 50-year-old building’s ventilation and other systems must be maintained to support the use of remote-operated equipment to remove the soil.

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Mission

DOE and CHPRC are designing, testing and procuring remote-operated equipment and making necessary building modifications to remove the highly contaminated soil, which allows for the eventual demolition of the facility. The contaminated soil is approximately 300 yards from the Columbia River, yet remains protected from rainwater and is immobile due to the 324 Building above it.

Workers are cleaning out contaminated rooms called “hot cells” to install remote-operated equipment.
Progress

- Due to high levels of contamination, workers are training on tools and equipment that will be used to access and remove the soil remotely.
- Testing equipment at a mockup prior to installing it at the 324 Building allows for potential problems to be discovered and fixed before working in a contaminated area.
- The mockup will also be used for troubleshooting issues during soil removal.

Safety and Efficiency

A short distance from the 324 Building, crews built a mockup of the building’s hot cell area. In this contamination-free environment, personnel train on equipment needed to remove the contaminated soil beneath the building.

The mockup increases safety and project confidence because it allows employees to work in an environment free of chemical and radiological hazards where testing and troubleshooting can be accomplished.

Future

To access the contaminated soil beneath B Cell, remote-operated equipment to remove debris and place a layer of grout (concrete) to control contamination.

CHPRC will use remote-operated equipment to remove debris and grout from the floor of B Cell, the stainless steel floor liner of B Cell, the 6-inch concrete floor, and will then start removing contaminated soil around the B Cell perimeter. The most highly contaminated soil will be put into adjacent hot cells within the building for grouting. Less contaminated soil will be packaged for safe shipment to the Hanford Site’s regulated landfill, the Environmental Restoration and Disposal Facility.