Building 324 operated from 1966 to 1996 and supported research involving highly radioactive materials.

The facility is located in Hanford’s 300 Area, which was home to uranium fuel manufacturing operations and research facilities to support the Site’s former mission of producing special nuclear materials for nuclear weapons production. Many of the contaminated buildings and much of the contaminated soil resulting from work conducted in the 300 Area have been cleaned up.

Building 324 demolition operations were postponed in 2010 after workers discovered significant contamination under a portion of the building. Demolishing the building and cleaning up the waste site is a top priority for the U.S. Department of Energy (DOE) and CH2M HILL Plateau Remediation Company (CH2M) due to the close proximity of the Columbia River and the City of Richland.

Today, CH2M is safely and compliantly managing the building, proceeding with design, testing, procurement and construction activities to remove the highly contaminated soil allowing for the eventual demolition of the facility.

More than 170 buildings have been demolished in Hanford’s 300 Area, located on the Columbia River and just north of the Richland, Washington city limits.

Building 324 is one of the last buildings to be demolished in the 300 Area.

Interior of a mock-up that will allow crews to test and train on remote-operated equipment to be used to excavate the soil from beneath the building.

For more information:
Dee Millikin, CH2M
(509) 376-1297, Dee_Millikin@rl.gov

Geoff Tyree, U.S. Department of Energy
Richland Operations Office
(509) 376-4171,
Geoffrey.Tyree@rl.doe.gov

Or visit us on the web at:
www.hanford.gov
www.plateauremediation.hanford.gov

A worker operates the manipulator inside of B Cell, one of four contaminated hot cells inside Building 324.
Remediation of Contaminated Soil

DOE and CH2M are designing and testing remote operated equipment to safely and compliantly remove the contaminated soil beneath Building 324, which is necessary before demolition of Building 324 can be completed.

Hazards

The contaminated soil is located beneath B Cell, a robust reinforced concrete structure within Building 324, in which employees conducted experiments and processes using remotely operated tools. A leak in the floor of B Cell during operations spread contamination to the soil beneath.

The contaminated soil is less than 3,000 feet (914 meters) from the Columbia River, yet remains protected from rainwater and immobile due to Building 324 above it.

Strategy

CH2M is currently engineering and testing a system to safely remove and dispose of the highly radioactive soil. The soil is far too contaminated for employees to safely enter the hot cell and remove the contaminated soil beneath the hot cell. Instead, workers will use remote-operated equipment, to be installed within the B Cell, to safely and compliantly excavate and dispose of the soil. Structural support is needed to stabilize Building 324 before soil beneath it can be removed to ensure required building systems will continue to function and provide necessary support throughout the project.

Safety and Efficiency

A short distance from Building 324, engineers constructed a full-scale replica of key areas of the facility. There, in a contamination-free environment, engineers and technicians will develop and test the equipment needed to remove the contaminated soil beneath Building 324.

This approach is safe because it allows work in an environment free of chemical and radiological hazards.

A mock-up such as this is also more efficient because testing and troubleshooting can be done immediately. If equipment is deployed in a contaminated environment, it sometimes cannot be retrieved for further testing or refinement.

Sampling probes monitor the contaminated soil beneath Building 324.

This conceptual illustration shows the remote-operated excavator and load-out mechanism to remove contaminated soil from beneath Building 324.

This schematic shows the contaminated vaults and cells, including B cell, inside Building 324.