The HANFORD REACH

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Cleanout of 324 Building's B Cell complete

The Department of Energy Richland Operations Office and Fluor Hanford have completed removal of contaminated equipment and debris from B Cell in the 324 Building in Hanford's 300 Area. B Cell is a hot cell — a shielded concrete room where radioactive material is remotely handled.

The three-story-high B Cell with 4-foot-thick concrete walls was considered the largest operating hot cell west of the Mississippi before it ceased operating in 1996. The last of Fluor Hanford's 57 shipments from B Cell was placed in the 200 Area burial grounds on July 18, completing Hanford's most challenging hot-cell cleanup task.

"Removing this equipment and debris from B Cell eliminates a major risk," said Beth Bilson, DOE-RL assistant manager for the River Corridor. "We used innovative techniques and equipment to successfully complete this very complicated task."

The 324 Building's B Cell before…

…and after cleanout.

Hottest of cells

After years of using B Cell as a storeroom for radioactive junk, DOE estimated that the cell contained nearly 3 million curies of radioactive material. The high radiation levels made the project even more challenging because all equipment removal activities had to be conducted using hot-cell manipulators and other remotely handled devices.

To remove the resulting small equipment debris, workers used a technology new to Hanford — a robotic crawler known as the Dispersible Removal System, or DRS — to help collect and vacuum the loose contaminated debris on the B Cell floor.

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Cleanout of 324 Building's B Cell complete, cont.

Workers operated the DRS remotely, using TV cameras and looking through 4-foot-thick shielded windows designed to protect them from the high levels of radiation. Once the waste was collected, workers packaged the material into waste containers and shipped the containers to the 200 Area.

"This remarkable achievement was the product of years of effort by a dedicated workforce," said Mal Wright, Fluor Hanford's director of the 324 Building deactivation project. "It didn't come easily. The 324 Building deactivation project workers worked tirelessly, overcoming many technical obstacles, to make this happen."

Forty-five of the 57 containers will ultimately be repackaged and shipped to the Waste Isolation Pilot Plant in New Mexico for final disposal. The remaining 12 containers have been disposed of as low-level waste in Hanford's 200 Area burial grounds.

The 324 Building Deactivation Project team enjoys a barbecue lunch to celebrate completion of B Cell cleanout. In left foreground is Rick Bond of the Washington State Department of Ecology.

More work ahead

The next steps toward 324 Building deactivation include removal of commercial spent nuclear fuel, which is still stored in the 324 Building's Radiochemical Engineering Cell — and, after that, the final cleanup of all four of the radiochemical engineering cells. Subsequently, the remainder of the building will be cleaned up.

Operations in the 324 Building began in 1965. B Cell was originally used for conducting studies on the chemical and physical processing of high-level radioactive materials and the physical characteristics of irradiated materials. Fluor Hanford took over deactivation activities in the 324 Building from the Pacific Northwest National Laboratory in 1996.

Cleanout of B Cell also completes the work associated with an interim Tri-Party Agreement milestone, which required DOE to remove all excess contaminated equipment, debris and loose dispersible materials from B Cell. In March of this year, DOE and Fluor Hanford completed shipping of the loose, dispersible mixed waste from the B Cell cleanout activities. ❖

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