

RESTORE THE RIVER CORRIDOR



Nuclear Energy Legacies

Cleanup of legacy sodium systems in the 337 Building continued, with three large test vessels successfully isolated from the sodium-system piping. The task of removing the small-diameter sodium piping for offsite disposal will continue through the summer. Meanwhile, roof repairs continued at the 309 Building to ensure an adequate weather barrier pending the facility's future deactivation. The 337 and 309 projects are both advancing cleanup of the 300 Area, which is adjacent to the Columbia River just north of the City of Richland.



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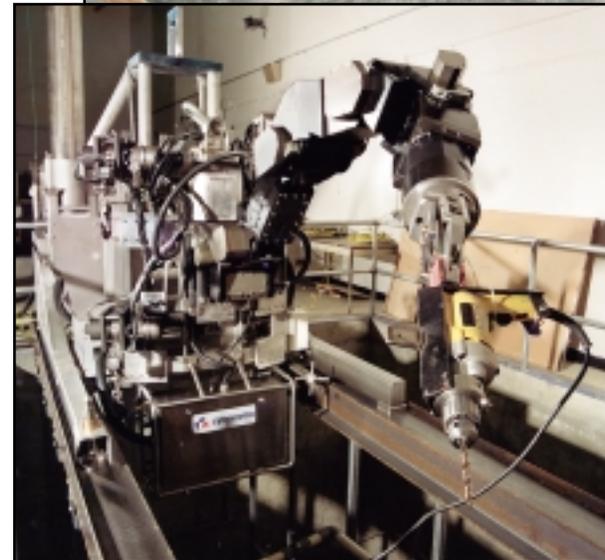
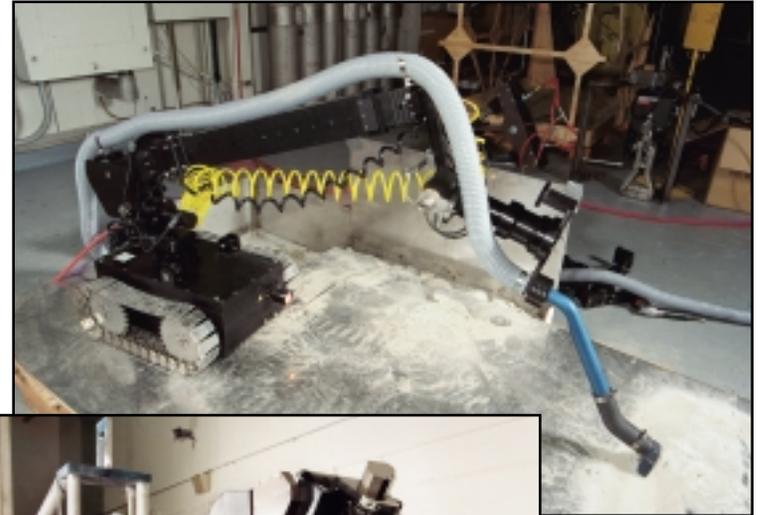
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With the help of robots, workers removed the residue in the 324 Building pipe trench and replaced the trench cover blocks, completing yet another key element of cleanup at the facility. A versatile robotic crawler (top) and a dexterous, heavy-duty robot arm (bottom), both shown in mockup settings used for training, were used in the pipe-trench cleanout. The robots allow cleanup work to be performed safely in highly radioactive areas where manned entry is not practical.



Major refurbishment of a 30-ton crane is also now complete. Reliable performance of the crane is important to effective cleanup at the 324 Building, located in the 300 Area.

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At the I Cell in the 327 Building, Project workers removed bulk waste, such as the items seen here through the thick, yellow, leaded glass of the cell window. They also removed the cell's glove bag and prepared for the final wipe-down of the cell. I Cell will be the third of 10 cells to be cleaned out at this 300-Area facility.



Workers successfully completed robotic hazardous sampling in the remaining five process cells at the 224-T Building needed to complete the first phase of characterization activities for determining appropriate cleanup steps. The facility is located in the 200 Area and the process cells were used in the 1940s and '50s to concentrate plutonium solutions.

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The next step following demolition last summer of 303-K, a former radioactive- and mixed-waste facility, is removal of the concrete slab on which the building sat. The Environmental Protection Agency recently approved a revised Notice of Construction for the slab removal so that aspect of the project can proceed. Taking down 303-K is part of the accelerated “skyline reduction” initiative under way in the 300 Area.



December 7, 2001, marked a very different cleanup success at Hanford: on that day, the 300-Area Treated Effluent Disposal Facility achieved a processing milestone of two billion liters of wastewater treated since the Facility’s startup in 1994.

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Spent Nuclear Fuel Project

Workers safely removed another 12 loads of spent nuclear fuel from the K-West Basin this quarter, moving more than 55 tons of irradiated uranium and about 1.8 million curies of radioactivity away from the Columbia River shoreline.

In the K-West Basin, an overhead monorail and manually operated hoists are used to place each two-barrel canister of spent fuel inside a box-like device for the process of decapping, or removing the cap from each barrel. The enclosure helps keep sludge or loose material, released when the caps are removed, from drifting into the surrounding water. After a flushing process, the enclosure is opened and the canister lifted out and moved, still underwater, to a processing table in another portion of the Basin.



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Spent Nuclear Fuel Project

These photos show spent-fuel assemblies from an opened canister (visible at lower right in the left photo) emptied out onto an underwater process table. A remote-operated device, called a Konan Arm, picks up each piece (left and center photos). Loose particles are washed off, and then the Konan arm places the cleaned spent fuel assembly in a specially fabricated basket (right photo). Filled baskets are placed inside a multi-canister overpack (MCO), which is fitted with an outer cask for transport to the Cold Vacuum Drying Facility.



This quarter, workers at the Cold Vacuum Drying Facility, where the MCOs containing baskets of spent fuel from the K-West Basin are vacuum-dried, further reduced the average process time for each MCO to less than 80 hours, well below their target of 90 hours.

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The 12 loads of spent fuel removed from the K-West Basin this quarter were dried, then transported and placed in interim storage in steel tubes beneath the Canister Storage Building (CSB) in Hanford's central plateau. The average cycle time at the CSB between the arrival of a loaded MCO and shipment of an empty MCO back to the K-West Basin is below the target of 18 hours.



Several managers and regulators from DOE's Rocky Flats (Colorado) site recently visited Hanford to learn about cleanup operations, including the Spent Nuclear Fuel Project. The visitors saw the CSB's massive MCO-handling equipment (top photo). In the bottom photo, Jerry Bazinet, of Numatec Hanford, describes the impact absorbers used in the storage tubes at the CSB. Mike Schlender

(kneeling), DOE-Richland's deputy manager for Site Transition, and Doug Sherwood (behind Schlender), the Environmental Protection Agency's Hanford manager, accompanied the tour group.

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Environmental Restoration Along the River

In November, the Bechtel Hanford-led Environmental Restoration Contract team began cleaning up the most radioactively contaminated liquid-waste site to date in Hanford's Columbia-River corridor. For 18 years, N Reactor discharged nearly 2.5 million gallons of highly contaminated cooling water daily into nearby cribs and trenches to dissipate the liquids through layers of silt, gravel and rock. Cleanup operations are now under way at the far end of the 1,600-foot-long zig-zag-shaped N-1 trench, opposite N Reactor (see inset). Eventually the 36,125-square-foot crib next to the reactor will be demolished and removed. By project completion next July, the team will have placed an estimated 125,000 tons of contaminated soil, rock, concrete and steel from this crib and trench into the Environmental Restoration Disposal Facility on Hanford's central plateau.

