

Waste Site Cleanup at Hanford's N Area

Background

The United States' only dual-purpose reactor was built in the early 1960s. It operated until 1986 and was decommissioned in 1989. Its dual purpose was to produce plutonium for the nation's weapons program and steam to produce electricity.

Another difference was that the reactor contained a "closed-loop" cooling system, meaning the cooling water was not returned to the Columbia River as it was with Hanford's previous eight plutonium production reactors. Any water that was not retained in the closed system was piped to large trenches or cribs where it was allowed to seep into the underlying soil.

Reactor piping and waste sites

As the largest of Hanford's reactors, it also contained the largest infrastructure. Part of the infrastructure included piping that carried water and steam to various sections of the reactor, as well as the steam generator facility and the disposal trenches and cribs. Most of the systems ended up becoming contaminated and are now being cleaned up.

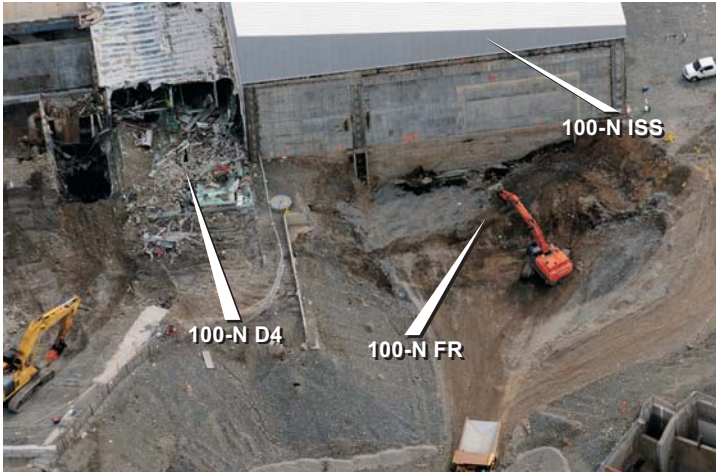
In addition to the contaminated piping and trenches, N Area also contained waste sites where contaminated reactor hardware and other equipment was disposed. It also included areas contaminated with industrial wastes, such as septic systems and burn pits, built during Hanford's and N Reactor's construction.



N Area included a total of 140 waste sites. They include sites of unplanned releases of contaminated material, as well as sites containing contaminated reactor piping, reactor hardware and other hazardous materials. In addition, reactor cooling water was disposed of in cement-covered trenches and cribs, pictured above.

By the time cleanup at N Area is completed in 2012, workers will have remediated 140 waste sites. Washington Closure is responsible for cleaning up 119 of the waste sites.

Washington Closure Hanford manages the U.S. Department of Energy's \$2.3 billion River Corridor Closure Project, the nation's largest environmental cleanup and closure project. A limited liability company owned by URS, Bechtel National and CH2M Hill, Washington Closure is responsible for demolishing 312 contaminated facilities, cleaning up 366 waste site and managing the Environmental Restoration Disposal Facility.



Tight cleanup schedules require coordination so building demolition and waste site cleanup crews can work safely in close proximity.

Bioremediation

In the 1960s, about 70,000 gallons of diesel was accidentally spilled. It eventually seeped about 75 feet to groundwater. Instead of digging up an area roughly 75 meters wide by 200 meters long by 75 feet deep. Workers are testing a bioremediation process that shows promise for cleaning up the diesel without digging.

Called bioremediation, the process involves injecting air into the ground. The oxygen in the air feeds bacteria that convert the diesel to carbon dioxide and water. With the successful completion of a six-month pilot project in April 2011, Washington Closure will design a larger system to remediate the entire diesel-contaminated area.



The N Reactor and steam generator buildings are being placed in interim safe storage while workers are cleaning up 119 waste sites at N Area. The work will be completed in September 2012.

Nearly 6 miles of contaminated reactor piping is being removed as part of the waste site cleanup efforts at Hanford's N Area.

