



# 300 Area

Restore the River Corridor • Transition the Central Plateau • Prepare for the Future



A partial view of the 300 Area

## Background/Description

Located just two miles north of the city of Richland and along the Columbia River shoreline, Hanford's 300 Area is home to about 240 buildings and structures. The 300 Area is most known for its role in fuel fabrication for Hanford's production reactors from the 1940s through the end of the 1980s.

The first production scale nuclear fuel fabrication process was deployed from the 300 Area, producing about 20 million fuel elements during the production lifetime. Developmental laboratories in the 300 Area were also significant during this time and some are still used today by the Pacific Northwest National Laboratory for various scientific and technology programs.

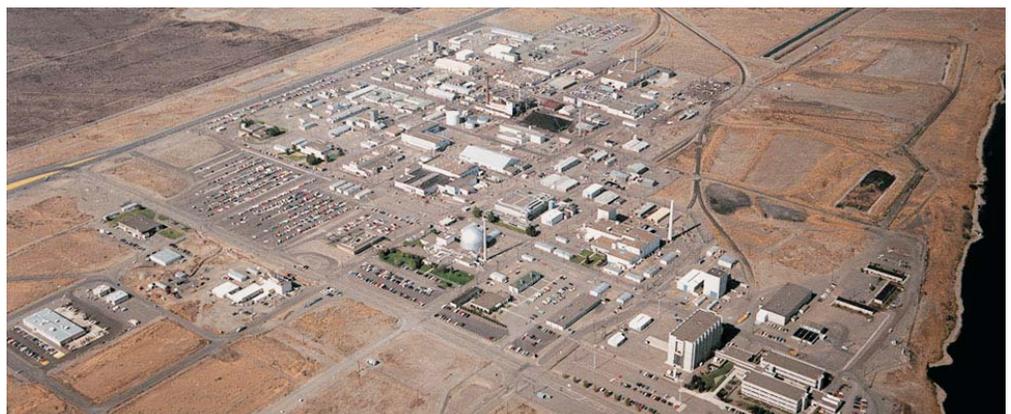
As a result of operating a nuclear research and production complex for 60 years, much of the soil adjacent to buildings and facilities has become contaminated through accidental discharges, leaks, past practices and effects of aging, and now requires remediation. Cleanup work is also needed to remove excess facilities and the aging infrastructure that supports the 300 Area – the water, sewer, steam and other utilities. Remediation of waste sites, removal of aging utilities and decommissioning and removal of the majority of the 300 Area is all part of DOE's efforts to restore the Columbia River Corridor. DOE is aiming to complete cleanup along the River Corridor by 2012.

A significant challenge in the 300 Area is the cleanup of the 324 and 327 Buildings. These two buildings contain "hot cells" that were once used for highly radioactive work. The heavily shielded concrete or steel cells represent a major challenge because of their size and level of internal contamination. The 324 Building's "B Cell" was once known as the hottest operating hot cell west of the Mississippi River. Since cleanup began in both of these buildings, workers have removed nearly 12 million curies of radioactivity, significantly reducing the risk to workers, the public and the environment. Currently, less than 70,000 curies remain in these buildings.

## Progress

The 300 Area has posed unique challenges as cleanup has progressed. The variety of waste sites and their contents and the difficult working conditions during cleanout of the hot cell facilities have pushed Hanford workers to think creatively and implement state-of-the art technologies.

In 1996, nearly nine million curies of radioactivity were removed from the 300 Area when the Federal Republic of Germany's "glass logs" were transferred from the 324 Building to an interim storage pad in the 200 Area. The logs will remain in the 200 Area until DOE can arrange for final disposal of the material.



An aerial view of the 300 Area, located along the Columbia River

## 300 Area

To cleanout the highly radioactive “B Cell” in the 324 Building, workers had to use remote equipment, such as cranes and hot cell “manipulators,” and conduct their work by looking through four-foot thick shielded windows or, in some cases, view it remotely using in-cell cameras. Other remote-handled equipment such as the “robotic crawler” and the “robotic work platform” were developed to perform some of the complex operations. In 2001, workers removed the remaining contaminated equipment and debris from the cell, removing nearly three million curies of radioactivity.

2001 was also a banner year for shipping a portion of the remaining uranium inventory out of the 300 Area. Nearly 380 metric tons of uranium was packaged and shipped for either permanent disposal or reuse at other national laboratories.

In 2002, workers made great strides in cleanout of the highly contaminated 327 Building. They successfully removed a highly radioactive source of curium oxide powder, which was stored inside of a metal container in the building’s fuel storage basin. In addition, over the past several years, more than 450 containers of contaminated waste in the hot cell has been repackaged and removed and excess fuel, irradiated test specimens, and other removable equipment have been completely removed from five of the 327 Building’s 10 hot cells. Cleanout activities have reduced the building’s radioactive inventory to less than 2,000 curies, compared to a 1996 count of about 105,000 curies before the deactivation mission was started.

Workers have also tackled two large burial grounds, known as 618-4 and 618-5. The 618-4 burial ground contained

over 700 corroding drums filled with uranium chips and oil. The drums were dug up, lifted by a crane that placed them into a special truck and shipped to the Environmental Restoration Disposal Facility in the middle of the Hanford Site for permanent disposal. Workers have also removed the contaminated soil (with lead) and lead shielding blocks in the 618-5 burial ground, leaving only final close-out to complete the task.



The majority of buildings and/or laboratories in the 300 Area will be demolished during cleanup (area under red lines)

In 2003, the entire inventory of Hanford’s commercial spent nuclear fuel located in the 324 building was shipped to the Central Plateau in the middle of the Site for safe, interim storage. The seven casks of fuel represented about 650,000 curies of radioactivity.

Waste site remediation and facility cleanout and demolition will continue in the 300 Area, wrapping up around 2012.

## For more information

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