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WASHINGTON STATE DEPARTMENT OF ECOLOGY

Nuclear Waste Program
3100 Port of Benton Blvd.
Richland, WA 99354
509-372-7950
800-321-2008

Reducing the Risk

The Waste Treatment Plant is currently under construction at the Hanford Site. This aerial photograph shows the progress of the Low Activity Waste facility in June 2006.

Waste Treatment Plant Vitrification: immobilizing waste in glass

In June 2002, workers poured the first cubic yard of concrete for the Waste Treatment Plant (WTP). The WTP is designed to treat more than 53 million gallons of hazardous and high-level radioactive nuclear waste currently being stored in 177 aging underground storage tanks at the Hanford Site. The start of construction was the result of more than ten years of effort by Washington State and the U.S. Department of Energy to build a facility capable of treating the waste and reducing the risk posed to people and the environment.

The WTP is projected to begin processing the waste sometime after 2011 by removing it from the old storage tanks, treating it, and immobilizing it in glass logs through vitrification. The WTP is the cornerstone to Hanford cleanup and Ecology is working hard to promote a timely launch for the WTP operations.

- Amount of waste that needs to be treated: 53 million gallons.
- Amount of glass that the WTP will be able to produce each day: 36 metric tons.
- Final temperature of the waste/molten glass mixture before entering the storage containers: 2,100 degrees Fahrenheit.

Currently, the Hanford Site is home to 177 tanks that were built starting in the 1940s. These tanks have exceeded their life expectancy and are believed to have leaked more than one million gallons of hazardous and radioactive waste into the ground. Eventually, this waste may reach the Columbia River. The WTP is critical in reducing the possibility of further threats to the people, environment, and Columbia River.

What is vitrification? Vitrification is the process by which a material is immobilized in glass. The tank waste will be incorporated into molten glass and be poured into stainless steel containers for cooling and storage. The waste will be safely stored in glass form while the radioactivity levels decrease over hundreds to thousands of years.

For additional information: http://www.ecy.wa.gov/programs/nwp

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