



March 4, 2010

Hanford Vit Plant begins key interior installation in Analytical Laboratory

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Richland, Wash. -- This week, crews at the Hanford Vitrification Plant began installing key equipment essential for safely transporting analyzed waste within its Analytical Laboratory (Lab). The equipment is part of a waste-transfer system that, when the Vit Plant is operational, will move waste that has already been tested through the Lab.

"These components are critical to safely transporting waste from the Lab," Heidi Schuette, deputy project engineering manager for the Low-Activity Waste Vitrification Facility, Balance of Facilities and Lab, said. "They required precision engineering and fabrication, and will require the same precision in installation." During operations, approximately 10,000 samples, from throughout the vitrification process, will be taken and analyzed annually to ensure a high-quality glass product and strong process controls. Analysis will also confirm the glass meets all regulatory requirements and standards.

To aid in this process, the waste-transfer process will begin when a small crane lifts a 55-gallon drum onto a cart, known as a "bogie." The drum and bogie will then move on rails through a protective shield door and up a hatch to the Lab's hot cell. The hot cell is a radioactive area where samples taken from various stages of the vitrification process are analyzed.

The analyzed waste will then be loaded into the drum remotely using manipulator arms and lowered back through the hatch and into the maintenance access area for removal from the facility.

Crews began installing the hatch this week and will continue installing the rails, bogie and shield door throughout the spring. The components were fabricated by Premier Technology, Inc. in Blackfoot, Idaho.

The Lab is one of the five major nuclear facilities that compose the Vit Plant. Its footprint is 320 feet long and 180 feet, and it stands 45 feet, or four stories, high.

"The external structure of the Lab was topped off in 2007, and we continue to make significant progress on the interior of the facility," Raleigh Amos, superintendent for the Low-Activity Waste Vitrification Facility, Balance of Facilities and Lab, said. "The installation of the waste-transfer equipment is just another step towards operations in 2019."

Bechtel National, Inc. is designing and building the world's largest radioactive waste treatment plant for the U.S. Department of Energy at the Hanford Site in southeastern Washington state. The \$12.2 billion Waste Treatment and Immobilization Plant (WTP), also known as the Vit Plant, will immobilize the radioactive liquid waste currently stored in 177 underground tanks using a process called "vitrification."

Vitrification involves blending the waste with molten glass and heating it to high temperatures. The mixture is then poured into stainless steel canisters. In this glass form, the waste is stable and impervious to the environment, and its radioactivity will dissipate over hundreds to thousands of years.

The WTP will cover 65 acres with four nuclear facilities -- Pretreatment, Low-Activity Waste Vitrification, High-Level Waste Vitrification and Analytical Laboratory-- as well as operations and maintenance buildings, utilities and office space.

Construction of the WTP began in 2001 and is now more than 50 percent complete. The plant will be operational in 2019.

Photo follows on page two



An integral component of WTP's Analytical Laboratory (Lab), the waste transfer system is being installed at the far end of the Lab hot cell area.