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Vit Plant crews finish complex cooling panel installations for Low-Activity Waste Facility

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Richland, Wash. -- Recently, crews at the Hanford Waste Treatment Plant, also known as the "Vit Plant," finished installing a series of cooling panels that are essential to maintaining a safe temperature in the Low-Activity Waste (LAW) Facility. The panels were installed in the area of the facility where the 2,100-degree-Fahrenheit waste-glass mixture, the final product of the vitrification process, will be poured into stainless steel containers for permanent safe storage.

"These cooling panels are part of a sophisticated cooling system designed to absorb the residual heat from the glass-forming process and keep the facility concrete at 150 degrees Fahrenheit or lower," Bill Clements, area project manager for the facility, said. This cooling system maintains the integrity of both the equipment and surrounding concrete, as well as allows the containers to cool enough to be transported out of the facility.

Starting in July 2010, crews have worked to install a total of sixty panels, which cover 2,900 square feet, in the LAW Facility. The panels range in sizes, from 4 feet wide and 16 feet long, to the same width and just a few feet long. They are also quite thin, less than three-quarters of an inch thick, and required custom-built frames to keep them from bending or folding during installation.

The panels were specially treated to absorb the massive amounts of heat and had to be handled with extreme care. Natural oils from human hands, for example, could compromise the special treatment coating. Therefore, the panels were covered in a polyurethane protective layer, which will be removed later. Workers wore cotton gloves during installation.

Now that the panels are installed, workers will connect piping that will transport chilled water to the panels. When the facility is operational, water will move through the panels as part of the cooling process.

"Completing the complex installation of these panels signifies the completion of thousands of hours of work within the LAW pour caves," Gary Olsen, Department of Energy area project manager for the facility said. "The contractor workforce continues to make excellent progress in the LAW Facility as we look toward construction substantially complete of LAW by December 2014. These installations support our commitment to completing construction of the Vit Plant in 2016 and achieving operations in 2019."

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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 58 percent complete. Construction is scheduled to be complete in 2016 and operational in 2019.

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