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## Hanford Waste Treatment Plant places first complex piping module in Pretreatment Facility

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**Richland, Wash.** -- Last weekend, crews at the Hanford Waste Treatment Plant, also known as the "Vit Plant," placed a 19-ton piping module inside the Pretreatment Facility. The module was lifted over 98-foot-tall walls and lowered into a space that provided less than two inches of clearance on each side and just a few feet on each end. It was set 56 feet above the ground.

The module was pre-assembled by union pipefitters on a temporary steel structure outside the Pretreatment Facility. It is the first and smallest of 13 such modules; the remaining 12 will be placed in the next few years.

"With such tight clearances, pre-assembly provides a safer working environment for our pipefitters because it allows them better accessibility and enables them to work at much lower heights," Ray Patterson, area project manager for the facility, said.

Pre-assembling the piping into modules also contributes to greater efficiency because it allows piping, concrete and steel work to occur concurrently. This way, when the concrete and steel are complete, the extensive piping is ready to install as a single unit.

The module was placed in what will be one of the facility's highly radioactive areas. These areas, known as "black cells," will be inaccessible to humans after the Vit Plant is operational. They will house process equipment, which connect to the piping module, that will require no maintenance for the plant's 40-year lifespan.

"This pre-assembled module approach required extensive, detailed planning and collaboration during both the design and construction phases," Wahed Abdul, federal area project manager for the facility, said. "It was essential to ensure the modules were built and installed with precision and to the highest nuclear-quality standards. It is a testament to the employees, from the engineers to the skilled craft, that we were able to accomplish this milestone."

Vit Plant engineers used advanced technology, such as laser scanners that produced detailed three-dimensional images of the piping and the cells, to ensure accurate alignment and fit.

The module is 15 feet at its highest point and spans approximately 54 feet in length and 33 feet in width. It contains 3,900 linear feet of nuclear-quality stainless steel piping, ranging in size from 0.5 to 26 inches in diameter, and more than 70 pipe hangers.

The Pretreatment Facility is currently 79 percent designed and 37 percent constructed. It is the largest of the four Vit Plant facilities.

A video of the installation is posted at <http://vimeo.com/27298946>

(continued)

*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 60 percent complete. Construction is scheduled to be complete in 2016. WTP will reach commissioning in 2019 and full plant operations in 2022.*

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The 19-ton piping module was lifted over the Pretreatment Facility's 98-foot-tall walls.  
(Photo 1 of 4)



The piping module was lowered into a space that provided less than two inches of clearance on each side and just a few feet on each end. (Photo 2 of 4)



The piping module rests 56 feet above the ground. Pre-assembling it outside the facility was safer because it provided workers with better accessibility and enabled them to work at much lower heights. (Photo 3 of 4)



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The module is 15 feet at its highest point and spans approximately 54 feet in length and 33 feet in width. It contains 3,900 linear feet of nuclear-quality stainless steel piping, ranging in size from 0.5 to 26 inches in diameter, and more than 70 pipe hangers. (Photo 4 of 4)