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## Hanford Waste Treatment Plant sets crucial air-filtration duct in High-Level Waste Facility

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**Richland, Wash.** -- Recently, crews at the Hanford Waste Treatment Plant, also known as the "Vit Plant," set a giant heating, ventilation and air-conditioning (HVAC) duct in the High-Level Waste Facility. The nuclear-quality duct is part of the facility's extensive filter system and will be essential to maintaining contamination boundaries during Vit Plant operations.

The stainless steel duct measures 5 feet in diameter, 30 feet in length and weighs 10 tons. It is one of two that will be connected to 50 primary nuclear-quality HEPA filters in the High-Level Waste Facility. Each duct will be attached to the filters using ten connectors, 2 feet in diameter and nearly 8 feet long, that are evenly spaced throughout its length.

"This duct is part of a highly sophisticated HVAC system that is essential to the safety, functionality and operability of the Vit Plant and the High-Level Waste Facility," Ray Patterson, area project manager for the facility, said.

Using a tower crane, the duct was lifted over the facility's 37-foot high walls and lowered into what is known as the "filter cave" at the ground level. It was then placed on the floor and will be attached later using industrial bolts. The second nearly identical duct will be lowered into place later this month.

The two ducts and HEPA filters that will be housed in the filter cave will filter contaminated air during Vit Plant operations. The filtered air will then be directed and released through an environmental emissions stack, similar to those already placed on the Low-Activity Waste Facility and Analytical Laboratory.

The primary HEPA radial filters, which each measure 2 feet in diameter and up to 3 feet long, will be attached to the ducts later this year. Once operational, the filter cave will not be accessible by humans and will be maintained using remotely operated equipment.

"Setting this duct and the filters will allow us to place the floors above the filter cave, essential to progressing construction of the High-Level Waste Facility above the 37-foot elevation," Jeff Trent, Department of Energy area project manager for the facility, said. "This will enable us to complete construction of the facility in 2016 and begin Vit Plant operations in 2019."

When complete, the facility will stand 80 feet tall. The High-Level Waste Facility is currently 33 percent constructed.

(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 57 percent complete. Construction is scheduled to be complete in 2016 and operational in 2019.*



Photo 1 of 2: Recently, crews at the Vit Plant lowered a 10-ton nuclear-grade HVAC duct into place in the High-Level Waste Facility.



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Photo 2 of 2: The duct will be connected to 50 primary HEPA filters and is part of a sophisticated HVAC system that will be essential to maintaining contamination boundaries when the Vit Plant is operational.

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