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Vit Plant’s Pretreatment Facility expands interior installations

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Richland, Wash., -- The Pretreatment (PT) Facility at the Hanford Waste Treatment and Immobilization Plant (Vit Plant) now reaches an impressive 77 feet in places and continues to rise steadily as concrete and steel are installed. Recently, the facility marked additional achievements when crews began installing a massive HVAC duct inside the facility’s hot cell. The duct is part of the primary air ventilation system in the PT Facility.

“This HVAC installation marks the expansion of work accomplishments in the PT Facility,” Leon Lamm, area project manager for the PT Facility, said. “Up until now, we’ve primarily concentrated on the exterior structural framework of the facility. Now, we are integrating efforts to install commodities inside the building.” The PT Facility is the largest of the four major nuclear facilities that compose the Vit Plant. Its footprint is 540 feet long and 215 feet wide, and it will reach an overall height of 120 feet.

The stainless steel HVAC duct is five feet in diameter and, once installed, will span more than 400 feet, the length of the facility’s hot cell. The hot cell will be a highly radioactive area that will be accessed only by remote-handling equipment. It will be used to separate the high-level radioactive solid waste from the low-activity liquid waste. Therefore, the HVAC duct must meet stringent nuclear-quality standards.

When the Vit Plant is operational, the duct will be essential for proper air filtration and ventilation. It will move air through the hot cell, as well as through the more-radioactive and completely inaccessible areas and up through the PT Facility environmental emissions stack. The stack will extend 60 feet above the PT Facility’s roof line.

Bechtel subcontractor Intermech began installing the duct in the east end of the hot cell last month. To prepare for the installation, ceiling coatings were applied to structural steel, and piping running above the ductwork was installed. Due to the size of the duct, work is expected to span the next few months.

Additional interior work has already started in other areas. Earlier this month, crews began major piping installations in one of the areas containing the four 275-ton waste feed receipt vessels. Structural progress continues as well. Work started on the third of ten steel zones at the 56-foot elevation earlier this month. The zone will contain a total of almost 350 tons of steel and is expected to be complete this winter.

“This is an exciting step forward because it demonstrates the PT Facility is moving forward on a wide array of work activities,” Lamm said.

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.

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.
The Pretreatment Facility is the largest of the four major nuclear facilities that compose the Vit Plant.

(Inset) The HVAC duct, located at the top of the photo, is five feet in diameter and, once installed, will span more than 400 feet, the length of the Pretreatment Facility’s hot cell.