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Construction completed on water treatment building for Hanford Waste Treatment Plant

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Richland, Wash. -- Recently, crews at the Hanford Waste Treatment Plant, also known as the “Vit Plant,” completed construction of an essential support building. The building houses equipment that will filter and treat water that will be used throughout Vit Plant facilities during operations.

“The Vit Plant will require an estimated 400 gallons of water per minute during normal operations, and this building is key to providing the quality of water needed,” Bill Clements, Bechtel area project manager, said.

The water will be transported from the Department of Energy’s (DOE’s) potable water system via underground pipelines. It will then be processed, using the equipment inside the water treatment building, into one of three water types--domestic (potable), process service or demineralized.

Each type of water will serve a specific function. The domestic water, the least-treated type, is for general use, such as safety showers and eyewash stations. The process service water is more fully treated than the domestic and used to produce demineralized water and for hose stations in the major nuclear facilities. The demineralized water, the most treated type, is filtered, and minerals are removed to prevent buildup. It is for equipment maintenance and operations, such as pipeline flushing, instrumentation rinses and equipment decontamination.

The water treatment building is located near the main entrance of the Vit Plant’s 65-acre construction site and is designed to handle more than 500,000 gallons per day. It houses 2 chemical-addition tanks, 15 water pumps and 9 process skids. Four storage tanks--two for the process service water and one for each additional type of water--are also located just outside the building. The storage tanks are connected via underground pipes to each of the Vit Plant’s four major nuclear facilities and various support buildings.

“The Vit Plant will be largely self contained, functioning like a small city; it will have its own substation, steam plant and fire water system,” Gary Olsen, DOE area project manager, said. “The water treatment building is part of this crucial support, and by completing it, we are making another significant step toward completing construction of the entire 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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