



# PROGRESS AT THE HANFORD VITRIFICATION PLANT



A publication for the Hanford Waste Treatment Plant Project

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## VIT PLANT LAUNCHES EXTERNAL SAFETY AND QUALITY WEBSITE

As part of the Vit Plant's ongoing efforts to be open and transparent, a new external website has been launched to provide the public, key stakeholders and the media with information about the project's Nuclear Safety and Quality Culture (NSQC). The website can be accessed at [www.hanfordvitplantsafety.com](http://www.hanfordvitplantsafety.com) and features many of the same elements as the project's internal NSQC website. These include frequently asked questions, newsletter articles, meeting quality topic handouts, reports, videos and all-employee messages.



The website also features Vit Plant employees and their commitment to safety and quality.

"We have thousands of employees who are 100 percent committed to ensuring the safety and quality of the Vit Plant," Frank Russo, project director,

said. "They live and raise their families here. They take pride in their work, and they understand the importance of the Vit Plant mission and getting the job done right the first time. It's time to show the public that."

## VIT PLANT TO HOST PUBLIC OPEN HOUSE IN RICHLAND ON NOV. 30

The Vit Plant will host an open house, Wed., Nov. 30, 5-7:30 p.m., at the Red Lion Hotel in Richland, Wash. The purpose of the open house is to promote public awareness and support the project's efforts to be transparent and open. Vit Plant subject matter experts will be available to answer questions, and Vit Plant exhibits and videos will be on display. Everyone is invited to attend.



To support the Vit Plant's community giving efforts, Santa will be on hand to collect donations for Toys for Tots.

## OVERVIEW

Starting in the 1940s, the Hanford Site, located in southeastern Washington state, was the largest of three defense production sites in the U.S. Over the span of 40 years, it was used to produce 64 metric tons of plutonium, helping bring an end to World War II and playing a major role in military defense efforts during the Cold War. However, as a result, 56 million gallons of radioactive and chemical wastes are now stored in 177 underground tanks on the Hanford Site.

To address this challenge, the U.S. Department of Energy contracted Bechtel National, Inc. to design and build the world's largest radioactive waste treatment plant. The Hanford Tank Waste Treatment and Immobilization Plant, also known as the "Vit Plant," will use vitrification to immobilize most of Hanford's dangerous tank waste.

Vitrification involves blending the waste with molten glass, heating it to high temperatures, then pouring it into stainless steel canisters. In this glass form, the waste will be stable and impervious to the environment, and its radioactivity will dissipate over hundreds to thousands of years.

The Vit Plant spans 65 acres and includes four nuclear facilities--Pretreatment, Low-Activity Waste, High-Level Waste and an Analytical Laboratory--as well as operations and maintenance buildings, utilities and office space.

Approximately 3,400 people are employed by Bechtel National, Inc. and its subcontractors. Construction of the Vit Plant began in 2001. The project is scheduled to complete construction in 2016; will reach commissioning in 2019 and achieve full operations in 2022.



## VIT PLANT RECEIVES AND SETS KEY AIR-FILTRATION EQUIPMENT FOR LOW-ACTIVITY WASTE FACILITY

Recently, the Vit Plant received and placed a key piece of air-filtration equipment in the Low-Activity Waste Facility. The nearly 100-ton carbon bed adsorber is part of a complex air-filtration system that will ensure the facility's air emissions meet strict environmental regulations and requirements.

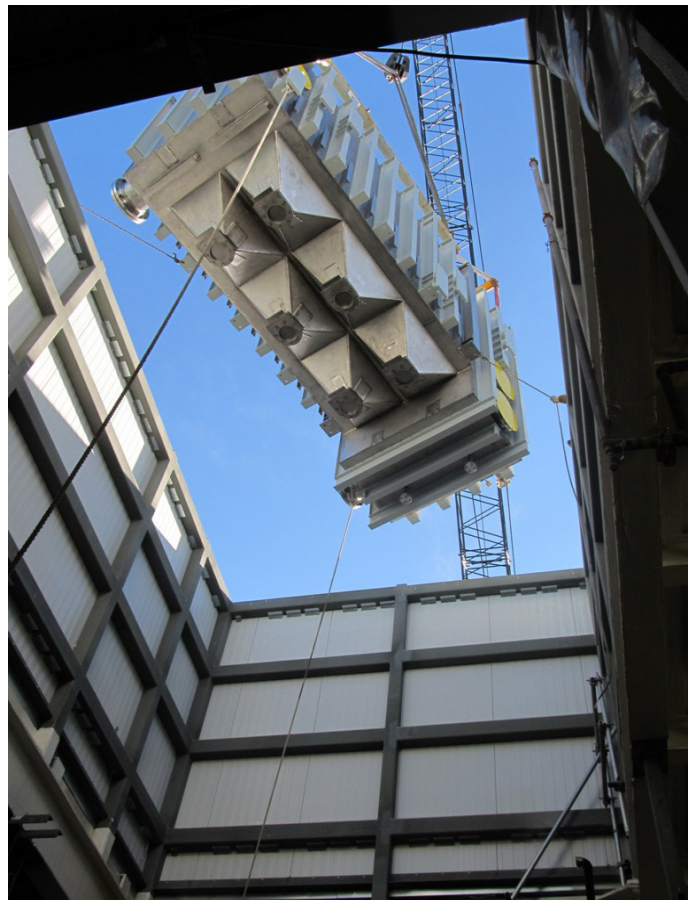
The extensive air-filtration system includes compliance monitoring equipment, HEPA filters, the adsorber, a thermal catalytic oxidizer, caustic scrubbers, exhaust fans and a more than 130-foot tall emissions stack. When operational, the adsorber will remove mercury and acid gases before air is channeled through the thermal catalytic oxidizer, which will remove organics and NOx.

Similar air-filtration systems will be used in the High-Level Waste and Pretreatment facilities. The Low-Activity Waste Facility adsorber is the first to arrive at the Vit Plant.

Completely assembled, the adsorber measures 45 feet long, 12 feet wide and 14 feet tall. It is composed mostly of stainless steel, including nearly 110 feet of 18-inch-diameter piping, and required more than 7,000 nuclear-quality welds to assemble.

The adsorber arrived at the Vit Plant construction site on seven trucks that included two base frames, two major units and two upper platforms and several crates of additional parts. Each major unit measures 21 feet long, 8 feet wide and 11 feet tall.

Using a crane, the adsorber parts were lowered through a hatch in the facility's roof to the 48-foot elevation. The hatch, which measures 16 feet by 26 feet, is not much larger than the units themselves and required careful planning by Vit Plant engineers and craft.



A video of the receipt and placement of the carbon bed adsorber is available at <http://www.hanfordvitplant.com/newsroom/videos/>.





## VIT PLANT COMPLETES FIFTH CONCRETE WALL ELEVATION FOR LARGEST FACILITY

Crews at the Vit Plant recently finished installing the Pretreatment Facility's fifth elevation of concrete walls. The fifth elevation reaches approximately 97 feet at the top.

To place the final walls, crews used a specialized concrete pumping truck with an extendable arm that reaches approximately 200 feet vertically or horizontally.

The Pretreatment Facility, the largest of the Vit Plant's four major nuclear facilities, comprises six elevated concrete sections and more than 113,000 cubic yards of concrete. Work on the sixth and final elevation is already in progress, and only four small wall sections remain before all concrete walls in the Pretreatment Facility are complete.

When complete, the building's walls will reach a total height of 109 feet. Steel columns and roof trusses will extend beyond the walls to an overall height of 120 feet.



## NEWSLETTER ARCHIVE

For previous editions of *Progress at the Hanford Vitrification Plant*, visit the Hanford Vit Plant website at [www.hanfordvitplant.com/newsroom/newsletters/](http://www.hanfordvitplant.com/newsroom/newsletters/).

## WTP QUICK FACTS

- The Vit Plant project is more than 60 percent complete.
- It is the largest Department of Energy construction project today and employs approximately 3,400 people.
- It is the first nuclear facility to be built in the United States in decades, requiring a re-establishment of the nuclear supply chain.



## ADDITIONAL INFORMATION

[www.hanfordvitplant.com](http://www.hanfordvitplant.com)  
[www.hanfordvitplantsafety.com](http://www.hanfordvitplantsafety.com)

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