

Moving of last cask marks milestone for West Valley Demonstration Project

By Rick Miller, County Reporter

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WEST VALLEY —The West Valley Demonstration Project marked another milestone last month with the moving of the last of 56 vertical storage casks — each carrying five 10-foot, steel canisters of radioactive glass — to an interim storage pad on the site.

The project was completed Nov. 17, a year ahead of schedule.

“The workforce remained focused on completing this important work one year ahead of schedule,” said David Brown, project manager for CH2M Hill BWXT West Valley. This major accomplishment was made possible because of the hard work and dedication of this crew.”

The removing of canisters from storage in the main process building was started in November 2015 by contractor CH2M Hill BWXT West Valley for the U.S. Department of Energy.

Twenty years ago the first canister was filled with a mixture of high-level radioactive liquid mixed with glass. Heated in a giant melter, the mixture turned to molten glass, which was then poured into the stainless steel canisters, where it solidified. The vitrification program ended in 2002 with 278 canisters containing most of the radioactive liquid from a 600,000-gallon underground steel tank.

They have been stored in the main process building awaiting eventual shipment to a national nuclear waste repository at Yucca Mountain, Nev. After that project was canceled due to environmental concerns, there was no place to dispose of the canisters.

Five of the canisters are contained in an overpack container that fits inside the steel-reinforced vertical storage casks weighing 87.5 tons. They have a 50-year design life and are currently sitting on a specially designed concrete pad on-site.



Photo submitted

Steel-reinforced concrete casks — each carrying five 10-foot steel canisters filled with radioactive glass — sit on a concrete pad at the West Valley Demonstration Project. The last of 56 casks was moved to the pad last month to allow the demolition of the main process building where they were stored.



Photo Submitted – This U.S. Department of Energy photo shows the last vertical storage cask containing an overpack with five canisters of highly radioactive glass being hauled last month to temporary storage on a special concrete pad at the West Valley Demonstration Project in the town of Ashford. It was the last of 56 special steel-reinforced concrete casks to be moved from storage in the main process building, which is scheduled to be demolished.

The interim storage configuration of the HLW canisters meets or exceeds all state and federal regulations and supports future off-site shipment, according to Department of Energy officials.

Since the next step in the decontamination and decommissioning of the nation’s only commercial spent nuclear fuel reprocessing plant is the demolition of the main process building, an alternate long-term storage plan was designed — open storage of concrete casks with five canisters each — on a pad nearby on the project site.

Decontamination continues inside the main process building — including high-level cells used during production when spent nuclear rods were chopped up and bathed in acid to recover plutonium. The room where the 278 radioactive canisters were stored must also be decontaminated. Miles of pipe are being removed from the building, as is asbestos, prior to demolition.

The demolition debris will be disposed of at a licensed off-site facility. Once it’s removed, including the foundation, the next step is finding and removing the source of a radioactive strontium leak that dates back to the early 1970s or before. The strontium leak has been contained and treated behind a specially designed permeable treatment barrier dug deep into the ground.

“I continue to be amazed by the accomplishments of our team of dedicated employees,” said Bryan Bower, project director.

“They have safely achieved another first for the ... complex. This is a huge step in moving forward with the deactivation activities of the main process plant building and vitrification facility as we prepare for demolition activities to begin in 2017.”

Another milestone at the project was the shipment last month of the radioactive melter and vitrification tanks used to make the glass-filled canisters to a Department of Energy-licensed facility in Texas. Several project officials were on hand to witness the final disposal of the equipment, which weighed more than 500 tons, at Waste Control Specialists in Andrews, Texas.

The project began in 1980 after passage of the West Valley Demonstration Project Act of 1980 to clean up the site where Nuclear Fuel Services had operated a nuclear fuel reprocessing plant from 1966 to 1972 and continued to accept spent nuclear fuel rod assemblies from utilities until 1975.

The plant closed in 1976 due to the cost of meeting new environmental regulations.

In addition to the demolition of the main process building and adjacent vitrification facility, other buildings are being demolished at the site as they are no longer needed.

Studies will help determine the extent of the next phase of cleanup. The question is whether the two large underground tanks that once held high-level liquid radioactive waste will be removed, and whether the state and federal low-level radioactive dumps will be excavated and removed.