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TESTS COMPLETED AT HANFORD'S PRETREATMENT ENGINEERING PLATFORM

Richland, Wash. -- Installed and fully operational, the Department of Energy's (DOE's) Pretreatment Engineering Platform (PEP) is fulfilling its intended function – confirming the effectiveness and throughput of essential waste pretreatment processes for Hanford's vitrification plant, also known as the vit plant. Advanced testing, known as phase one testing, began January 31, 2009, following completion of startup testing.

The PEP is a quarter-scale demonstration facility of two waste pretreatment processes -- ultrafiltration, separating waste solids and liquids, and leaching, dissolving elements necessary to divide the low-activity from the high-level waste to minimize the number of costly high-level waste canisters produced. These processes will be used when the vit plant is operational. The vit plant, which is being designed and built by Bechtel National, Inc. and primary subcontractor URS-Washington Division, will process and stabilize millions of gallons of radioactive and chemical waste currently stored at the Hanford Site.

"The PEP allows us to test our technical processes at a large scale, and resolve potential issues before the vitrification plant comes online," said John Eschenberg, DOE Office of River Protection Assistant Manager. "This early work will save us time and money once the vit plant is online, allowing us to more quickly begin full operations."

Designed and fabricated in Carlsbad, N.M., the PEP is a modular facility that will easily allow for system replacements, reconfigurations and modification as necessary, like the WTP Pretreatment Facility itself. Approximately the size of a basketball court and two levels high, the PEP is composed of 16 skids that were shipped over a five-month period and assembled at Pacific Northwest National Laboratory (PNNL) in Richland, Washington. The PEP is located on the PNNL campus and operated by staff from PNNL, Bechtel National, Inc. and URS-Washington Division.

To prepare for phase one testing, PEP operators completed water shakedown testing, that is, running the entire system process using water, and simulant shakedown testing late last year. This allowed operators to make sure the PEP functions as a complete, integrated system; ensure it produces accurate, reliable data and resolve any technical issues.

Shakedown testing included four confirmatory tests that took place over five to 10 days. The results were then analyzed, modifications were made and the PEP was cleaned and set up for the next test.

“We are extremely confident in the data the PEP is producing and pleased with the results,” John Truax, PEP project manager for the vit plant, said. “The PEP is providing the additional assurance we need to continue to progress construction and design of the vit plant.”

In fact, one of the phase one tests has been eliminated because the necessary data were able to be acquired during simulant shakedown testing. Phase one confirmatory testing is scheduled to conclude at the end of the month. The need for additional testing phases is still being evaluated and is largely dependent on the outcome of the phase one.

“We’re pleased with the performance of the PEP,” Gordon Beeman, PEP project manager for PNNL, said. “We have a high degree of confidence this facility will allow the vit plant designers to resolve difficult waste processing issues, which will allow the vit plant to perform as designed, safely and efficiently.”

The U.S. Department of Energy has contracted with Bechtel National, Inc., and principal subcontractor Washington Group International, Inc., a subsidiary of the Washington Division of URS Corporation (URS), , to design and build the world’s largest radioactive waste treatment plant 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 2002. The plant will be operational in 2019.