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Idaho Site Improves Waste Treatment Facility After Successful Demonstration

IDAHO FALLS, Idaho – Crews for Department of Energy Environmental Management (EM) cleanup contractor Fluor Idaho are completing several improvements to the Integrated Waste Treatment Unit (IWTU) following a 50-day demonstration of the facility.

Crews will finish that work prior to another test run before actual waste treatment operations begin.

IWTU was built to treat 900,000 gallons of liquid waste from nearby underground waste tanks that accepted rinse water and other effluents from historic spent nuclear fuel reprocessing. So far, the facility has treated approximately 225,000 gallons of liquid simulant in six demonstrations.

During the most recent test, IWTU converted more than 63,000 gallons of liquid simulant to a dry, granular solid. Engineers and IWTU operations personnel were impressed with the stability of the plant and the effectiveness of IWTU's steam reforming technology.

"The takeaway from this and the previous 30-day demonstration runs is that the IWTU facility and its steam reforming technology works for liquid waste treatment," said Archie Benner, IWTU nuclear facility manager with EM cleanup contractor Fluor Idaho. "The plant operated as designed and we'll now focus on three key process improvements that are necessary to progress to the next level."

In the two most recent demonstrations, IWTU filters became plugged with fine particulates. Testing at a Colorado facility called Hazen Research helped EM and Fluor Idaho select new filters to improve the efficiency of IWTU's process gas filters. Further testing will refine new operating parameters and installation requirements for the new filters.

IWTU engineers are working with a company to test a robotic arm for decontaminating stainless steel canisters that would be filled with treated waste once IWTU begins operating.

Testing continues on a new system to allow operators to decontaminate a cell, vessel, and piping without disassembling and manually cleaning them. A sump system would transfer the liquid decontamination solution from the cell for processing.

Crews also are working with a mock-up of the IWTU's primary reaction vessel — called the Denitration Mineralization Reformer — to test the ability to enter the vessel and replace its internal parts once radioactive waste treatment begins. A mock-up has also been fabricated for the process gas filter and off-gas filter vessels to test removal and replacement of filter bundles and associated equipment in a radiological environment.

Fluor Idaho, LLC is a wholly owned subsidiary of Fluor Corporation with subcontractor partners CH2M, North Wind Inc., Portage, and Waste Control Specialists. Fluor Idaho manages the Idaho Cleanup Project Core contract at the Department of Energy's Idaho National Laboratory Site located 45 miles west of Idaho Falls. The 5-year, \$1.4 billion project, funded through the U.S. Department of Energy's Office of Environmental Management, focuses on safely remediating the Idaho National Laboratory site including dispositioning transuranic waste, managing spent nuclear fuel, and treating high-level radioactive waste.

For more information visit the Idaho Cleanup Project on the Web at <https://fluor-idaho.com>

Proposed Photo Captions

External view of the Integrated Waste Treatment Unit (IWTU)

A view of the Integrated Waste Treatment Unit's (IWTU) filter bundles being tested at the Hazen Research facility in Colorado. The testing helped EM and Fluor Idaho select new filters to improve the efficiency of the process gas filters of the IWTU at the Idaho National Laboratory Site.