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FOR IMMEDIATE RELEASE

H Canyon Makes Room for New Dissolver and New Mission

AIKEN, S.C. (June 16, 2021) - Contractor employees at the Savannah River Site (SRS) are preparing for an upcoming campaign to dissolve stainless-steel clad spent nuclear fuel by disposing of old equipment to make room for the installation of a new dissolver and an additional double-sized tank for dissolved material storage.

“The upcoming dissolving campaign will add a third electrolytic dissolver to the complement of equipment already in use in the canyon and will provide the capability to dissolve stainless steel fuel,” said Savannah River Nuclear Solutions (SRNS) Senior Vice President of Environmental Management Operations Wyatt Clark. “The current chemical dissolvers are designed to dissolve aluminum-clad fuel, so they are not adequate to support the upcoming mission.”

A significant deactivation and removal campaign is underway to prepare for the mission. Timely and safe disposition of legacy equipment is essential to keep the project on schedule. H Canyon recently completed removing the first of three shipments of legacy equipment to make room for this new campaign.

“When jumpers or other H Canyon equipment fails and needs to be replaced, the failed equipment is placed in a large engineered container called a burial box, using the canyon remote cranes,” SRNS Project Manager for EM Operations Richard Brown said. “Once that box is full, we secure the package, verify it is free of any radioactive contamination and transfer it to the SRS Solid Waste Management Facility for disposal.”

In an effort to minimize the number of burial boxes required to remove the failed equipment, SRNS purchased a size reduction tool (i.e., cutter)



A train pushes a burial box full of failed equipment from H Canyon to the Solid Waste Management Facility for disposal. The equipment is being removed to make way for a new H Canyon spent nuclear fuel dissolving campaign.

and grapple system. Savannah River National Laboratory Research and Development Engineering provided support to this effort by designing and retrofitting the cutter and grapple controls to allow for operators to utilize the H Canyon Hot Crane to remotely operate these tools. These tools will be used to remotely reduce the size of jumpers and other large failed equipment to maximize the amount of equipment loaded into a burial box.

“We will be better protecting our workers through the use of this equipment, since the material will be cut remotely instead of in person by employees,” said Brown. “While this equipment was specifically purchased for the upcoming dissolving campaign, we will be able to utilize it for future missions as well.”

Preparations for the new campaign also include preparing and calibrating the double-sized tank and new dissolver with the use of a bladder tank and pump system. The use of the bladder tank and pump system speeds up the calibration process by pumping water versus using a domestic water hose to fill the 50- and 150-gallon prover tanks, which are vessels used to add a specific volume of water to the tanks being calibrated. Once a calibration run is complete, the water is pumped from the vessel back to the bladder tank, using recycled water instead of fresh water for each of the four minimum calibration runs per vessel.

The stainless-steel clad fuel is currently stored in SRS’s K Area and will be shipped to the canyon for processing. Once the fuel is dissolved in the electrolytic dissolver, the resulting solution will be transferred to the liquid waste tank farms. The material will then be transferred to the Defense Waste Processing Facility where it will be converted into a solid glass form and placed in an SRS facility for interim storage.

Savannah River Nuclear Solutions, a Fluor-led company with Newport News Nuclear and Honeywell, is responsible for the management and operations of the Department of Energy’s Savannah River Site, including the Savannah River National Laboratory, located near Aiken, South Carolina.

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