News from the Savannah River Site
U.S. Department of Energy • Aiken • SC • 29808

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Savannah River Site Team's Creative Solution Furthers Tank Waste Retrieval

AIKEN, S.C. (April 16, 2024) – Innovation fueled the creation of a new tool at the Department of Energy Office of Environmental Management's (EM) Savannah River Site (SRS) that helps ensure equipment being lowered into an underground liquid waste tank does not encounter any interferences.

This grinding tool, built by the construction team for SRS liquid waste contractor Savannah River Mission Completion (SRMC), was needed to remove obstructions inside of a tank top opening — known as a riser — in H Tank Farm, one of two groupings of underground waste tanks at SRS. The tanks hold radioactive liquid waste generated as byproduct from the processing of nuclear materials for national defense, research, medical programs, and for NASA missions. Risers are used to lower equipment, such as mixing pumps and jets, into the waste tanks.

The obstructions included remnants of welding material left over from equipment previously removed from the tank in the 1970s. With obstructions remaining on the inside of the riser, crews would be unable to insert a mixing pump needed for waste removal and tank closure activities.

The team took on the difficult task led by Tony Smith, construction superintendent, and Beau Nichols, discipline engineer. Both Smith and Nichols were supported by pipefitters, the radiological protection group, and the inspection and monitoring team. The groups developed, tested, and perfected the tool and its use though several mock-up evolutions.

"The tool we used was a disc grinder, with diamond grit coating, attached to a 20-foot steel tube," Nichols said. "It utilizes guide bars on one end to prevent the disc from grinding too deeply into the riser, as well as some modifications that allow the grinder to be operated by workers who must stand at a safe distance."

The tool is suspended overhead from a crane and is secured at the riser opening to maintain a consistent elevation for the grinding.

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Page 2 - Savannah River Site Team's Creative Solution Furthers Tank Waste Retrieval

Pipefitters in a protective hut were able to view their work on a closed-circuit TV monitor staged in the hut, while live video was provided by a camera attached to the tool just above the grinder. The superintendent and radiological protection personnel also viewed the video feed in a nearby command trailer while providing guidance through radio communication.

Jim Folk, DOE-Savannah River assistant manager for waste disposition, said clearing the access riser was an important step for continued treatment of the tank's waste.

"Successful waste removal is the first step toward operational closure of a liquid waste tank," Folk said. "This tank is one of several that is entering final stages of removal from use, and this creative solution helps the tank remain on its path to closure."

Cutline: This photo shows some of the welding material that was needed to be removed from inside a waste tank riser at the Savannah River Site. The material was ground away to allow for insertion of a mixing pump.