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Project to Double-Stack SRS Waste Canisters Reaches Milestone

AIKEN, S.C. (February 16, 2021) – The U.S. Department of Energy’s Office of Environmental Management (EM) and its liquid waste contractor at the Savannah River Site (SRS) have reached another significant milestone in a project to double-stack canisters containing high-level radioactive waste.

Savannah River Remediation (SRR) has surpassed the halfway milestone in modifying underground canister storage positions in Glass Waste Storage Building 1, one of two interim canister storage buildings onsite.

The innovative storage solution saves more than $100 million by creating adequate safe interim storage until at least fiscal 2029, postponing the need for a third storage area. The canisters will be safely stored in the GWSBs until a federal repository for high-level waste is established.

Modifying the storage positions means they can be used for double-stacking canisters. Modifications have been completed in 1,351 of the 2,262 original storage spaces. More than 1,180 canisters have been doubled-stacked in GWSB 1 since the project began in 2016. Double-stacking canisters will increase the canister capacity in the first storage building from 2,262 to 4,524 positions.

The original canister storage positions have an elevated steel crossbar support base and a four-foot concrete shield plug that sealed the opening at the top of each canister’s storage position. To modify the position to hold two canisters — one on top of the other — the crossbar that supports the canister is removed and the shield plug is replaced by a thinner galvanized cast iron shield plug that is denser and is designed to accommodate the upper canister. The new plug provides equivalent radiation shielding and structural support. A 1.25-inch galvanized steel support plate is placed on the vault floor to support the canisters in place of the crossbar support.

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The canisters hold waste transferred from the SRS waste tanks and vitrified at the Defense Waste Processing Facility (DWPF). Part of the high-level waste stream received at DWPF and processed into canisters now comes from the newly operational Salt Waste Processing Facility.

Jim Folk, DOE-Savannah River Assistant Manager for Waste Disposition, said the canister double-stack project is an important piece in the overall EM cleanup mission.

“Now that the Salt Waste Processing Facility is operational, production through the liquid waste system will increase significantly,” Folk said. “Therefore, it is important now more than ever to ensure we are adequately prepared for onsite interim storage through double-stacking canisters.”

SRR President and Project Manager Phil Breidenbach said the work of safely storing waste canisters is sometimes a less visible element of the SRS liquid waste program but is still a key part of it.

“Production would have to stop if we didn’t have adequate storage space for the high-level waste canisters,” Breidenbach said. “Double-stacking allows production to continue, saves taxpayers money, and helps reduce the most significant environmental risk in the state.”

A feasibility study, including evaluations for radiological, fire protection, structural, and environment, was completed for GWSB 2 last year to confirm the building is safe for double-stacking. A demonstration of double-stacking in this second building is planned for this summer.

Cutline: DOE-Environmental Management and Savannah River Remediation, the liquid waste contractor at the Savannah River Site, have surpassed the halfway milestone of modifying high-level waste canister storage positions to accommodate double-stacking canisters in Glass Waste Storage Building 1.