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New Melter at SRS Pours First Canisters of High-Level Waste

AIKEN, S.C. (Jan. 10, 2018) – A new melter at the Savannah River Site (SRS) — only the third in the 20-year history of the Defense Waste Processing Facility (DWPF) — recently poured its first canisters of vitrified radioactive waste.

On Dec. 29, Melter 3 completed a half-filled canister left from Melter 2 operations, then poured a full canister of vitrified waste Jan. 1. It has since poured six more canisters.

Known as the heart of DWPF, the 75-ton teapot-shaped vessel treats high-level radioactive liquid waste stored in SRS waste tanks by blending it with a borosilicate glass, or “frit,” to form a molten glass mixture, a process known as vitrification. The mixture is poured into stainless steel canisters stored onsite until a permanent disposal facility is identified.

“Stabilizing and safely storing highly radioactive waste is an important part of the Department of Energy’s mission to remediate the Cold War-era liquid waste at SRS,” said DOE SRS Manager Jack Craig. “The new melter allows us to continue this important mission.”

SRS liquid waste contractor Savannah River Remediation (SRR) installed Melter 3 when Melter 2 reached the end of its operational life last year after a record 14 years in operation, pouring 2,819 canisters, or 10.8 million pounds of glass.

Installing Melter 3 into DWPF was a complex task that took several months to complete. Hundreds of actions were taken to prepare the new melter to pour glass, including the fabrication and installation of dozens of electrical and process jumpers connecting the melter to the facility. Workers completed extensive testing of melter-related components and supporting systems in conjunction with rigorous assessments of the work performed to ensure safe, compliant melter startup.

Melter replacements are built into the overall SRS Liquid Waste System Plan, meaning there have been no production impacts to the liquid waste lifecycle due to this outage, said SRR President and Project Manager Tom Foster.

(more)

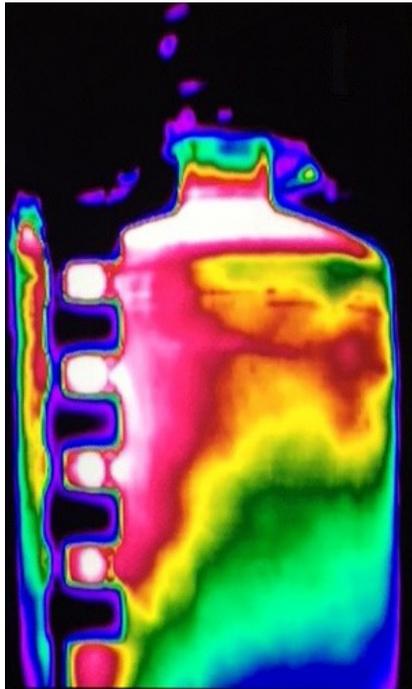
“SRR really optimized this system outage to replace the melter,” Foster said. “We saw it as an opportunity to focus on other critical facility upgrades while we integrated the schedule of a separate planned outage to tie in the Salt Waste Processing Facility (SWPF) into our current liquid waste facilities.”

SWPF, which is undergoing testing and commissioning, will process low-level salt waste accounting for more than 90 percent of waste in the SRS Tank Farms.

DWPF remains in an outage to finish facility upgrades and implement updated safety documents. Upgrades include maintenance in the chemical process cells, electrical and steam system maintenance, and other internal equipment improvements. Underlying those upgrades and new melter operations is the Documented Safety Analysis, which provides the technical basis for ensuring safe, compliant operations of DWPF and other facilities. Other SRS liquid waste facilities also remain in an outage to continue system upgrades and maintenance.

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An infrared photo of a canister being filled with radioactive waste on Jan. 1.



Melter 3 enters the Defense Waste Processing Facility in June 2017. It poured its first canister of vitrified high-level radioactive waste Dec. 29.

