

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 31, 2018

TO: Christopher J. Roscetti, Technical Director
FROM: M. T. Sautman and Z. C. McCabe, Resident Inspectors
SUBJECT: Savannah River Site Activity Report for Week Ending August 31, 2018

H-Canyon: Approximately 3800 lbs. of aluminum nitrate solution was inadvertently transferred to a dissolver containing four Material Test Reactor fuel bundles. At the time of the event, a building operator was preparing the Dissolver Drowning Tank in case there was a runaway reaction in the dissolver. There are three valves and a nozzle in the flow path between the tank and the dissolver and normally the tank's outlet valve and a transfer wall nozzle are kept closed unless an emergency transfer is required. Since aluminum nitrate solution is used in an emergency to stop the dissolution of aluminum cladding reaction and this solution diluted the dissolver contents, there are not any flammable gas generation or criticality safety concerns with the current dissolver contents. SRNS is conducting a thorough investigation of the configuration and condition of the equipment and the circumstances surrounding this inadvertent transfer.

While performing maintenance on a diesel generator, a mechanic noticed that the two bolts that attach the C-phase bus bar to a mid-span support bracket were missing. A work history review indicates that this condition may have existed since the late 1990s. While the bus bar has been functioning properly, engineers are evaluating whether the missing bolts would have impacted the seismic qualifications of the safety class diesel generator. The diesel generator was already in a Limiting Condition for Operation for the ongoing outage.

Salt Waste Processing Facility: The resident inspector observed the solids resuspension portion of the full-scale sludge solids receipt tank 30-day settle test. Air sparging provided by the air pulse agitators did not leave any undisturbed accumulations of solids on the tank bottom.

Emergency Preparedness (EP): During the last few years, SRNS has been developing new drill scenarios to address emergency response and other expected worker actions noted in their Documented Safety Analyses, Emergency Planning Hazard Assessments, and other documents that were not covered by a scenario (see 10/10/14, 11/7/14 and 5/1/15 weekly reports). Of the 67 EP scenario gaps, 20 gaps now have approved scenarios and an additional 13 are in draft. Of the 97 conduct of operations scenario gaps, 18 gaps have approved scenario and 2 more are in draft.

Saltstone: SRR conducted the first transfer of radioactive grout to Saltstone Disposal Unit 6 or the "mega-vault."

Savannah River National Laboratory: Analysis of legacy materials in the 776-A High-Activity Residue pipe gallery has determined the solids holdup adds an additional 2.4 g Pu-239 equivalent to the facility inventory. In addition, 3000 gallons of inventory was transferred out of the facility. In light of this, SRNL has concluded that the facility is still well below the Hazard Category 2 threshold.

Tank Farms: SRR exited the deliberate operations they had previously established for alarm response. (See 7/20/18 report). SRR continues to update their alarm response procedures.