

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 3, 2023

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** A.Z. Kline, L. Lin, Z.C. McCabe, and E.P. Richardson, Resident Inspectors  
**SUBJECT:** Savannah River Site Activity Report for Week Ending March 3, 2023

**DNFSB Staff Activity:** Member of the Board's staff D. Campbell was onsite to observe operations at Tank Farms, H-Canyon, and L-Area as part of a review of the site's nuclear criticality safety program and the Accelerated Basin Deinventory mission. Member of the Board's staff J. Abrefah was onsite to participate in the Material Identification and Surveillance annual meeting at Savannah River National Laboratory (SRNL).

**SRNL:** SRNL personnel recently conducted two issue investigations regarding a loss of power impacting the Central Hood Exhaust Fan and a minor construction worker injury. In both instances, SRNL personnel conducted the investigation thoroughly. The resident inspectors (RI) noted minor areas for improvement regarding a construction work order that was not discussed initially. In both instances, SRNL personnel reviewed the response to the abnormal events and self-identified several areas for improvement including documentation of issues, log keeping and procedure compliance. The heightened level of investigation of the response and development of corrective actions for these events is encouraging considering past issues.

**H-Canyon Spill:** While pumping depleted uranium (DU) from a 55-gallon drum into a tank at H-Canyon, operators failed to properly secure the transfer hose, using the weight of a flange pressed against it to hold the hose in place. When the drum was nearly empty, an operator tilted the drum, at which point the pump began cavitating and causing slugs of DU and air to be sent to the tank. This caused the transfer hose to be ejected from the tank and DU sprayed from the unsecured hose until an operator secured the pump a few seconds later. Most of the DU was contained within the posted contamination area, but a few drops splashed outside the established boundary. The highest contamination levels recorded were 1,000,000 dpm/100 cm<sup>2</sup> β/γ and 2000 dpm/100 cm<sup>2</sup> α inside the basin and 2000 dpm/100 cm<sup>2</sup> β/γ and 400 dpm/100 cm<sup>2</sup> α on the walkway. Immediate actions taken by the operators and radiological protection department (RPD) personnel were appropriate, which resulted in no personnel contamination from this event. All personnel involved were frisked clean at the spill site and cleared a personnel contamination monitor. At the issue investigation, the operators stated that they had used this same method numerous times to pump gadolinium (Gd) with no issues noted, but this was the first time pumping DU, which is much more dense than Gd. This was the second spill of radiological liquid from the use of temporary systems in H-Canyon in the last two months (see 1/27/23 report). SRNS management initiated a thorough review of related processes and procedures in H-Canyon to evaluate the extent of condition. All DU transfers have been paused pending the result of the review.

**H-Tank Farms:** An emergency preparedness drill was conducted at Tank Farms. The response in the Technical Support Room (TSR) was generally good and coaching opportunities were taken by the drill controllers. The RI noted that there were some artificialities in the actions discussed between the TSR and the facility that was likely due to the fire department not being able to participate in the drill.