DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 16, 2023

TO: Katherine R. Herrera, Acting 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 June 16, 2023

Staff Activity: Members of the Board's staff H. Dacayanan and R. Eul were on site to support the Savannah River Plutonium Processing Facility Annual Peer Review.

H-Canyon: Following sampling activities in the hot crane sample aisle, an operator detected contamination on their outer shoe covers via a count rate meter. Follow-on surveys detected a maximum contamination level of 160,000 dpm/100cm^2 β/γ on the operator's coveralls and 500,000 dpm/100cm^2 β/γ on the floor in front of the sample box. Later, in the RP instrument room (a clean area) radiological protection (RP) personnel detected 10,000 dpm/100cm^2 β/γ on an instrument, which was used for a previous sampling activity in the same location.

The resident inspectors (RI) observed the H-Canyon Annual Exercise that simulated a radiological spill and one injury. The RIs observed from the control room, incident scene, and technical support room. DOE-SR and SRNS are evaluating the facility's performance.

Defense Waste Processing Facility (DWPF): To prepare for an electrical system outage, DWPF operations conducted system alignments, which included closing the fire water inlet valve to the cooling tower deluge system. However, when DWPF operations restored the systems after the outage was complete, they did not reopen the fire water inlet valve to the deluge system. The fire system test group discovered the valve closed approximately four weeks after the outage was completed, which means the deluge system was inoperable during that timeframe. Operations management conducted an issue investigation and discovered multiple issues occurred. For example, the fire system impairment did not include the fire water inlet valve, the operations procedure for system alignment referenced a procedure that was voided in 2015, an administrative lock was removed and not documented appropriately, a pre-job briefing was not conducted for the system alignment work, and an operability check was not conducted after restoring a fire system. The issue investigation identified appropriate corrective actions.

H-Tank Farm: An operator lost balance and unknowingly bumped a pistol-grip switch into an intermediate position which caused a solenoid valve to open and allow 368 gallons of radioactive liquid waste to move from the 16H evaporator pot to Tank 38. The operators identified the issue at the first indication (pot level alarm) and completed all appropriate actions.

Surplus Plutonium Disposition (SPD): Personnel drilled into the footer that supports the safety class Shuffler Room wall twice when they exceeded the prescribed drill depth into a slab slated for removal. The issue investigation revealed numerous issues that led to the event, including multiple work groups not properly assessing the drawing included in the package showing the footer, and workers continuing to drill down to 24 inches when the expected depth to encounter the grade below the slab was 6 to 12 inches. A Non-Conformance Report has been issued and structural engineers are evaluating the impact to the integrity of the wall.