DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 16, 2025

TO: Technical Director
FROM: Savannah River Site Resident Inspectors
SUBJECT: Savannah River Site Activity Report for Week Ending May 16, 2025

Staff Activity: A resident inspector (RI) from Y-12 was onsite for RI augmentation.

Savannah River National Laboratory (SRNL): SRNL personnel identified a potential inadequacy of the safety analysis (PISA) when they discovered plutonium-238 was not included in the isotopic data for the Separations Equipment Development (SED) facility. The contractor discovered this issue when they were performing an extent-of-cause review on their electronic inventory tracking system after an issue had been identified in November 2024, in which not all radioisotopes were entered into the tracking system (see 1/24/2025 report). The calculation used to determine SED material-at-risk (MAR) inventory limits did not include Pu-238 holdup present in the facility, and therefore the radiological dose consequences calculated using these MAR values may not be conservative. The SED facility is an inactive area with limited operations, and the safety basis prohibits the entry of additional radioactive material into the area.

Salt Waste Processing Facility (SWPF): An RI observed the replacement of O-rings on a recently replaced crossflow filter (see 5/9/2025 report). Maintenance personnel performed a post-maintenance pressure test for one of the filters and observed leakage from the O-rings. They assembled a work package to replace the O-rings, inspect the O-ring grooves, and inspect the threaded lock ring for each bolt hole, verifying the surface is flush with the housing rings. The RI noted that the work package did not include specifics on how these inspections were to be performed and questioned the supervisor directing the work about the techniques that were used. Although the work package lacked details on how these inspections were to be performed, no anomalies were noted and the filter passed a subsequent pressure leak test.

SWPF personnel attempted to decontaminate a room containing a strip effluent transfer pump with a leaking drain valve casing. The dose rates were too high for personnel to enter the room to perform the necessary maintenance on the pumps. After various flushing attempts of the lines, maintenance personnel sent a robotic crawler in with a pressure washer and carbon dioxide blaster to continue decontamination efforts. During the effort, a radiological control technician (RCT) entered the corridor adjacent to the room to pull samples from an airborne radiation monitor. While there, a continuous air monitor alarmed, and the control room received a high beta alarm on the radiation monitor in that corridor. Control room personnel entered the appropriate abnormal operating procedure, and all occupants were evacuated from the corridor. Radiological protection personnel probed approximately 5,000 dpm beta/gamma on the RCT's left temple after he evacuated. Radiological protection personnel successfully decontaminated the RCT and sent him to internal dosimetry.

H-Canyon: H-Canyon personnel are performing three-year inspections of the exhaust tunnel. Lab personnel added LiDAR capabilities to the robotic crawler (in addition to high-resolution cameras) to create three-dimensional maps that track tunnel degradation.