DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 26, 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 May 26, 2023

Savannah River Tritium Enterprise (SRTE): Fire patrols and other limiting condition for operation (LCO) required actions are tracked via the Site Operations Standardized Tools (SOST) system. Due to scaffold installation in a process room, SRTE personnel established a fire patrol per the Technical Safety Requirements (TSR), which direct them to establish the patrol immediately. The TSR bases default to a 1-hour periodicity for subsequent patrols unless a longer time is approved by fire protection personnel. In this case, fire protection personnel approved a 4-hour periodicity. Further discussion between the resident inspector and SRTE personnel revealed a weakness in the implementation of the safety basis in that subsequent fire patrols are not considered TSR-required actions (only the initial establishment is). After an operator completed another unrelated (oxygen monitor) reading, the Shift Technical Engineer (STE) inadvertently entered the completion of the fire patrol LCO in SOST, but immediately recognized the error. While resetting the fire patrol timer back to what it was previously, the STE realized that it had been approximately 4 hours and 30 minutes since SRTE personnel completed the last reading and informed the Shift Operations Manager (SOM). The SOM dispatched an operator to complete the patrol immediately. During an issue investigation, SRTE personnel concluded that upon completion of the previous fire patrol, the operator inadvertently selected a box to apply a 25% extension to the completion time (i.e., grace period), which is why the SOST display did not change colors (at 30 minutes) or alarm (at 12 minutes) prior to 4 hours elapsing. The grace period would apply if these were identified as TSR-required actions. Rather, SRTE personnel rely on the fire protection program and implementing procedures to ensure fire patrols are completed. SRTE personnel are developing corrective actions.

Savannah River National Laboratory (SRNL): Construction personnel recently replaced a safety significant sprinkler head in D-Wing. A few hours after completing the pressure test and accepting the installation, the head began to slowly drip. The SOM determined that the system remained operable based on system pressure, fire pump, and water tank level indications and operability being acceptable. However, the SOM did not consult fire protection engineering. Days later, construction personnel arrived at SRNL to perform other work activities when the SOM informed them of the drip leak. The SOM believed that site services was going to visually inspect the leak; however, they believed they were asked to attempt to repair it. Therefore, without proper work release or entering an LCO, site services personnel attempted to tighten the sprinkler head, which worsened the leak to a spray. They quickly notified the SOM, who entered the appropriate LCO while they isolated the system.

K-Area Annual Exercise: The resident inspectors (RI) observed the K-Area Annual Exercise that simulated a radiological fire during transport of criticality control overpack (CCO) drums and two injuries. The RIs observed from the control room, incident scene, and technical support room. DOE-SR and SRNS are evaluating the facility's performance.