DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 4, 2023

TO: Timothy J. Dwyer, 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 August 4, 2023

Savannah River Tritium Enterprise (SRTE): The Resident Inspectors (RIs) observed an Emergency Preparedness (EP) drill involving a deflagration and stack release from H-Area New Manufacturing (HANM), concurrent with simulated medical emergencies in HANM and the Tritium Extraction Facility. This was the first complex EP scenario that SRTE has performed since their improvement efforts began in 2022 (see 7/7/23 report). The approved drill package could not be executed as written and did not contain required information for the controllers to drive the scenario properly, including many simulated values, alarms, and indications. Drill initiation was not coordinated properly, resulting in reports from the field about a tritium release and deflagration prior to any indications in the control room. Communication issues were evident throughout the event, most notably with the use of emergency radios. SRTE is limited to one channel on the radios, which required operations, the radiological protection department (RPD), the drill team, and the fire department to share bandwidth and caused delays in response. A recent change in strategy related to the Incident Scene Coordinator resulted in no leadership at the incident scene, and personnel not knowing which location they were conversing with. SRTE leadership feedback at the de-brief identified some issues with player performance but was not appropriately self-critical of the SRTE drill team.

H-Canyon: An operator exiting the canyon sample aisle alarmed the personnel contamination monitor. The RPD technician supporting the evolution determined that the electronic personal dosimeter (EPD) the operator was wearing was contaminated. The operator was improperly wearing the EPD inside of two layers of protective clothing while working, thus, the evolution in the sample aisle was not the likely source of contamination. Further investigation did not conclusively determine where this contamination came from, but it was likely from an evolution several days prior in the canyon truck well. During the prior evolution, a worker wore the same EPD in a plastic bag outside of protective clothing, which issue investigation personnel believe was improperly surveyed as clean following the work.

Defense Waste Processing Facility (DWPF): DWPF personnel convened an issue investigation regarding the improperly implemented temperature loop check surveillance requirements (see 7/28/23 report). DWPF personnel determined that the failure to properly implement the Technical Safety Requirement (TSR) surveillance requirements for years did not constitute a TSR violation. Further, they determined in hindsight that instrument loops were operable the entire time this error was implemented despite the instance in 2020 where the surveillance would have not passed the criteria if correctly implemented. This would have required the facility to enter the applicable Limiting Condition for Operation (LCO), but they did not. DWPF personnel justified this position by confirming that the calibrations months before and months after the out-of-range reading passed were within the acceptable range. Further, they stated that they had also fortuitously completed all of the LCO required actions within the required completion times; however, they had not recalibrated the loop, which would have been required to exit the LCO.