

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 22, 2024

**TO:** Timothy J. Dwyer, Technical Director  
**FROM:** L. Lin, Z.C. McCabe, and E.P. Richardson, Resident Inspectors  
**SUBJECT:** Savannah River Site Activity Report for Week Ending March 22, 2024

**Tank Farms:** During revisions to flammability calculations as part of a Potential Inadequacy in the Safety Analysis (PISA) from 2020, personnel determined that a new PISA existed for the flammability calculations for the Tank Farms evaporators. The 242-25H evaporator calculations did not account for flammable vapor generating material within the evaporator pot for several scenarios involving leaks. The 242-16H evaporator calculations did not account for flammable vapor generation from sodium aluminosilicate scale that could be present. Therefore, the parameters used in safety basis calculations may not be conservative, and the controls may not provide the mitigation or prevention credited in the safety basis. The safety significant evaporator ventilation systems are currently credited for controlling the flammable vapor concentration to prevent an explosion. Personnel determined that the existing purge flowrates and Limiting Conditions for Operation (LCO) response times are still adequate, and no additional actions are needed outside of the compensatory measures that were identified in the Evaluation of the Safety of the Situation from the 2020 PISA.

Tank Farms conducted an emergency preparedness drill simulating a spill from a hose-in-hose, above-ground radiological waste transfer and a medical injury. The drill team identified numerous weaknesses in the response to the medical injury and the radiological protection department (RPD) response at the scene. Overall, personnel exhibited a lack of urgency and a lack of a questioning attitude during the drill. In addition, the resident inspector (RI) noted that similar questions from a drill last year remain, namely whether operators and response personnel going to the scene should wait for RPD inspectors (see 2/24/23 report). The RI also noted that the drill scenario was written in such a way that information of a spill was dependent on whether responders are in a location where they can “see” the spill to report it. This is realistic, but the desire for this drill was to limit the amount spilled, which meant controllers had to introduce artificialities into the drill when responders at the scene did not earn information on the spill.

**Savannah River National Laboratory (SRNL):** SRNL personnel conducted an emergency preparedness drill involving a simulated transuranic waste drum exploding in the B-Wing Courtyard, which contaminated one person and injured two others. The controller organization took multiple constructive coaching opportunities during the training drill, including prompting the shift operations manager to classify the emergency and initiate protective actions. Further, the drill players in the control room identified areas of improvement and noted some potential scenario improvements, such as the number of SRNL personnel available to support an emergency response if an event occurred outside of dayshift on Monday to Thursday.

**Surplus Plutonium Disposition (SPD):** NNSA conducted an External Independent Review (EIR) this week for Critical Decision (CD)-2/3 of the SPD project. The EIR team reviewed documentation and held discussions and interviews with site personnel to assess the maturity and technical design of the project, the adequacy of key performance parameters, cost and schedule estimates, and risk assessments. A final report will be developed with any findings.