

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 23, 2022

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 December 23, 2022

Salt Waste Processing Facility (SWPF): During a safe energy check to prepare for the replacement of the SWPF access portal, construction electricians called a timeout after discovering energized wires running through a junction box. An SWPF Electrical and Instrumentation (E&I) mechanic completed the safe energy determination for the lockout, but due to a lack of familiarity with the work scope did not inspect the junction box. No personnel were exposed to hazardous energy during any part of this evolution, but the lockout violated site procedures requiring all voltage sources in proximity of the work site be de-energized, where possible. Also contributing to the event, lockout orders at SWPF are no longer routed to construction management for review and approval following transition to the SRMC construction organization because of the contract change. An SWPF E&I mechanic and lockout writer/approvers missed multiple opportunities to call a timeout or ask for assistance due to unclear work scope and poor equipment labeling leading up to this event. SRMC senior management was very active during the fact finding and asked probing questions that led to satisfactory direct cause identification and the development of appropriate corrective actions. Planned actions include: (1) routing lockout orders to construction management by paper until full transition to the site database takes place, (2) accelerating adoption of the site hazardous energy control manual, (3) troubleshooting to ensure all wires and junction boxes are positively identified prior to moving forward with the access portal project, and (4) evaluating changing the entire scope of the project to eliminate similar future issues.

Savannah River National Laboratory (SRNL): A technician working in a radiological hood cut through two layers of nitrile gloves with a pair of scissors while attempting to remove a radiological sample from a sealed bag. Immediately after the technician realized they had cut through their gloves, the researcher accompanying them contacted the radiological protection department (RPD). RPD inspectors arrived at the scene and conducted radiological surveys which determined the worker was not contaminated or injured. The two researchers remaining in the laboratory then continued the evolution by cutting the sample bag and began the planned analysis without further delay or notification to their management team. The researchers continued working for approximately two minutes before the RPD first line manager returned to the laboratory, who called a time-out and instructed them that they should not continue working. The issue investigation revealed additional shortcomings. For instance, despite conducting a pre-job brief prior to bagging out the sample in another laboratory that morning, the technician and researchers did not hold a pre-job brief for the scope of work that included introducing the sample into the radiological hood and conducting the planned analysis. Additionally, SRNL personnel noted that the technician failed to follow the documented sharps protocol, which requires additional tools or protection (such as a more robust glove) to prevent hand injuries when one cannot keep their hands out of the “line of fire.”