DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 27, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: Z. C. McCabe Resident Inspector
SUBJECT: Savannah River Site Activity Report for Week Ending August 27, 2021

K-Area: K-Area personnel inadvertently actuated a safety-significant interlock, which caused the standby exhaust fan to the K-Area Interim Surveillance (KIS) Vault to start. K-Area personnel were swapping out the glovebox bag-out port bag, causing a low differential pressure alarm in the KIS Vault and control room. Suspecting an issue with the bag, the personnel in the KIS Vault were able to quickly (within 10 seconds) place the cap on the bag out port, which returned the ventilation to normal and cleared the alarm. This quick response prevented the supply fan from actually shutting down and prevented the standby fan from starting, which would have been the designed response to low differential pressure. Believing the supply fan had shut down, K-Area commenced efforts to restart the supply fan later that shift. The governing procedure did not direct the operators to verify the current status of the fans, which are only identifiable via a local flow meter (i.e., there are no other local indication of the status and the high noise makes it difficult to tell if the fan is operating). When the operators turned the supply fan hand switch off, as directed by the procedure, the safety significant interlock actuated, and the standby exhaust fan came online. Consequently, several alarms sounded in the control room. Control room personnel believed these were expected alarms and did not recognize that the safety-significant interlock had actuated. While noting that the supply fan had not shut down as originally thought, control room operators failed to log this information or make appropriate notifications. The operators continued with the procedure and returned the ventilation system to the normal configuration. Days later, another shift operations manager reviewed the log book and alarm history and noted a discrepancy, which led to the identification of the issue.

Salt Waste Processing Facility (SWPF): Improper radiological control practices resulted in three personnel and several areas in the lab becoming contaminated when laboratory technicians were removing waste from the hot cells via the adjacent glovebox line hood. A technician was assisting with the waste removal when they identified contamination on the outer glove of their anticontamination clothing. A Radiological Protection Department (RPD) technician assisted doffing the technician's contaminated glove; however, they incorrectly assessed that the contamination came from using the hood rather than the glovebox glove and allowed continued to use the glovebox glove. After using the same glovebox glove, another laboratory technician did not identify that their hands were contaminated and continued to assist with removing the waste. In doing so, they contaminated three glovebox gloves and several other items. The technicians identified that they were contaminated when they monitored out of the area. RPD found contamination on one technician's face, hair and hands, the second's hands, and the third's shoes. The maximum contamination measured was 35,000 dpm/100 cm^2 beta/gamma. RPD escorted two of the technicians to the decontamination room and began decontaminating with soap and water. The technician with contamination on their face and hair was instructed to use the decontamination shower. Eventually, all personnel were decontaminated. Per Parsons procedure, lab technicians are required to monitor their hands every time they remove them from a glovebox glove. However, Parsons personnel discussed how this is a difficult task at times in the laboratory due to the high background readings.