DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 13, 2023

TO: Timothy J. Dwyer, Acting Technical Director
FROM: L. Lin, Z.C. McCabe, and E.P. Richardson, Resident Inspectors
SUBJECT: Savannah River Site Activity Report for Week Ending October 13, 2023

Salt Waste Processing Facility (SWPF): A resident inspector (RI) observed simulator evolutions as part of the Next Generation Solvent (NGS) readiness assessment (RA) taking place at SWPF. The operations team performed well, and the procedures were executed as written. At one point, the instructor noticed that the procedure was stapled out of order and handed the operator a new version in the middle of the evolution instead of taking a timeout as would be expected. The RA team and DOE had similar observations. The remainder of RA activities were completed satisfactorily throughout the week.

Savannah River Tritium Enterprise (SRTE): A control room operator (CRO) unintentionally blew a rupture disk while preparing to load a set of reservoirs. While the load line manifold was coming up to pressure, the CRO attempted to step up the pressure of the sample loop, which is a concurrent procedure step. Per procedure, this is done by cycling two valves until the desired sample loop pressure is reached. However, the CRO had to cycle the valves repeatedly as the pressure increases to the sample loop were not as large as anticipated. While cycling the valves, the load line manifold reached the desired pressure. The procedure anticipates this somewhat rare event and provides the allowance to complete a series of time-sensitive steps to close the valves connecting the high-pressure manifold and compressor to the load line manifold, and then open another valve to prevent over pressurization in the high-pressure manifold. Several steps later, the procedure directs the CRO to turn off the compressor. Instead, the CRO isolated the compressor and high-pressure manifold without closing the other valve in the high-pressure manifold. They then returned to cycling the valves in attempt to step up the sample loop pressure. This resulted in over pressurization and the failing of one of the high-pressure manifold rupture disks. The issue investigation identified several potential contributors, including the CRO being distracted by the unexpected need to cycle the sample loop valves repeatedly. SRTE personnel are in the process of developing corrective actions.

H-Canyon: Operators initiated a transfer of radioactive material from tank 12.1 to tank 18.4 while the tank 18.4 liquid level instrumentation was out of service (OOS). The turnover sheet and status control sheet indicated that the 18.4 liquid level instrument was OOS for a lockout to support installation of rotameters. The SOM, shift technical engineer, and control room first line manager did not register that the equipment was OOS prior to approving the transfer. The CRO proceeded with the transfer, noticed that the liquid level in tank 18.4 was not increasing and, with direction from the control room first line manager, attempted to stop the transfer from the distributed control system. However, the gang valve was unresponsive and another operator had to go manually manipulate the gang valve in the field. The transfer was stopped after a total of 29 minutes. Engineering evaluated the amount of material transferred and determined that it was below the tank limit and that there was no violation of the double contingency analysis. Personnel have placed administrative seals on the valves to prevent movement of material into and out of tank 18.4. Management is developing corrective actions to improve administrative controls for equipment that is out of service for extended periods of time.