DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 18, 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 18, 2023

Savannah River National Laboratory (SRNL): During a planned evolution to remove and replace an old propane pipe, a construction worker inadvertently cut an abandoned nitrous oxide pipe. Construction personnel immediately called a timeout, contacted the shift operations manager, and placed the work area in a safe condition. Facility management declared the incident a reportable event because if the pipe had actually contained nitrous oxide or if they had inadvertently cut one of the other nearby active pipes (e.g., helium), it could have resulted in an unsafe condition for the construction worker. Operations personnel conducted an issue investigation and determined that the procedure for a line break was not followed. Construction personnel did not appropriately include the line break procedure in the work package since the propane pipe was previously cut a few months prior and was visible. The issue investigation team was unable to develop corrective actions during the meeting and work on the propane line is suspended until a corrective action is implemented.

Defense Waste Processing Facility (DWPF): DWPF experienced an unplanned pour of radioactive waste from the melter into an empty container during calibration activities. The melter off-gas system has two pressure transmitters that monitor the vapor space pressure. Electrical and instrumentation (E&I) personnel were calibrating one of the pressure transmitters, which affected the signal and resulted in the primary off-gas exhauster tripping off. The resultant increase in the melter pressure caused approximately 57 lbs of molten radioactive glass to pour from the melter. Operators in the control room noticed the pour, requested E&I to secure the calibration, and restarted the primary off-gas exhauster, stopping the pour. During the issue investigation, personnel discussed that a separate maintenance activity meant the backup off-gas system was unavailable at the time, so when the primary off-gas exhauster tripped, the backup exhauster did not come online. E&I personnel did not complete the step in the reference work instructions to request operations to switch to the backup off-gas system before starting the calibration. Siphon alarms came in during the calibration just before the inadvertent pour, but operators did not stop and question the alarms. The resident inspector questioned the determination that this was not a reportable event considering that radioactive liquid was unintentionally poured from the melter due to a series of issues in work planning and execution.

Salt Waste Processing Facility (SWPF): SWPF cyber security personnel installed a new media validation agent for their systems in the May to June timeframe of this year. The team found no problems in the development and training environments. However, after the validation agent was installed in the production environment, which has redundant virtual servers, the agent did not allow the mounting of the virtual drives. This was discovered in August when, after a shutdown of power for a maintenance activity and then restoration, the facility experienced problems with their server. During troubleshooting, several basic process control systems (BPCS) stations were lost in the control room. The facility put transfers and processing on hold. All safety-related controls were still functional. The new agent was uninstalled and BPCS was restored to full functionality, and corrective actions are being developed.