DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 17, 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 November 17, 2023

Staff Activity: Members of the Board's technical staff convened a teleconference with DOE-SR and contractor personnel regarding their implementation and use of the DOE Corporate Operating Experience Program and DOE Order 210.2A.

Salt Waste Processing Facility (SWPF): Due to the electrical outage and recent bus duct fire, SWPF was in an abnormal electrical configuration when personnel were performing a functional test of an automatic transfer switch (ATS) on November 6. SWPF personnel failed to confirm the configuration would support the testing, which resulted in the loss of the Basic Process Control System (BPCS), Process Building Ventilation System (PBVS), Process Vessel Vent System (PVVS), and Pulse Mixer Vent System (PMVS). Prior to the testing, SWPF personnel chose not to perform a section of the electrical outage package due to the bus duct fire impacts (see 11/10/23 report). SWPF personnel failed to recognize the impacts of not performing the section as it would have restored the uninterruptable power supply (UPS) and supported the ATS functional test. SWPF personnel identified another shortcoming in that the ATS functional testing procedure does not require personnel to check that the UPS is operable prior to starting. When the facility received alarms for the BPCS and safety significant ventilation systems, control room personnel entered the appropriate abnormal operating procedures (AOP) and limiting conditions of operation (LCO). During the issue investigation, SWPF noted that they had also failed to properly restore a lockout, which would have also prevented the issue. The resident inspector (RI) noted that it was unclear whether the personnel involved knew they were to return the UPS to service since they were not present during the issue investigation.

On November 8, SWPF had a partial loss of power in the control room and lost the PVVS. Maintenance personnel had de-energized one of the motor control centers as part of their electrical outage work. One of the circuit fuse breakers faulted, so when the main power was de-energized, the circuit did not supply backup power to the panel which communicates with the ventilation systems. Control room personnel entered the associated AOPs and LCOs. During the issue investigation, personnel discussed that the control room previously received intermittent fault alarms, but incorrectly assumed they were part of the expected alarms due to the outage work. For both these events, the facility will perform an apparent cause analysis.

On November 13, the shift operations manager (SOM) incorrectly listed that a valve should be open instead of closed for lockout restoration. An operator opened the valve, which caused water to begin flowing to the salt solution feed tank (SSFT). Three hours later, a control room operator noticed the flow indication by chance and attempted to close the valve via the BPCS, but it faulted and remained open. The SOM directed an operator to close the manual isolation valve, which stopped the flow after approximately 4,000 gallons of water had been added. During the issue investigation, personnel discussed the expectations for monitoring of equipment during outages and requiring peer review of valve positions on lockout sheets in the future. The SSFT was sampled and there are no impacts from the addition of water.