

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 15, 2023

TO: Katherine R. Herrera, Acting Technical Director
FROM: L. Lin, Z.C. McCabe, and E.P. Richardson, Resident Inspectors
SUBJECT: Savannah River Site Activity Report for Week Ending December 15, 2023

DNFSB Staff Activity: Members of the Board's staff P. Foster and C. Scheider visited the site to renew radiological worker qualifications and perform facility familiarization. They toured the Salt Waste Processing Facility (SWPF), Defense Waste Processing Facility (DWPF), and the Savannah River National Laboratory. They also discussed the bus duct failures that occurred in April and November of this year with SWPF engineering.

DOE DWPF Saturation Review: Based on sustained poor conduct of operations performance at DWPF, DOE-SR conducted a week-long saturation review where twelve DOE personnel from inside and outside of the Waste Disposition Operations Division reviewed control room operations, field activities, lockout/tagout operations, the contractor assurance system, and the facility safety culture. Although DWPF has been in deliberate operations since early October and completed a six-week period of 24/7 Senior Supervisory Watch (SSW) prior to this review, the DOE team identified a troubling number of findings and opportunities for improvement across the areas observed. Several observations indicate fundamental issues are still prevalent such as a control room operator using a personal electronic device while at their console, personnel failing to use three-way communications during technical safety requirement surveillances being observed by an SSW (who didn't correct the issue), and an instance where an operator and first line manager intended to operate equipment outside of the procedure and without notifying the shift operations manager. DOE convened a management review board to discuss these observations.

DWPF: Following the review and while in deliberate operations, DWPF personnel inadvertently transferred 400 gallons of water to the Slurry Mix Evaporator while attempting to flush the J-tube for the Sludge Receipt and Adjustment Tank. Due to an error in the work package, maintenance personnel entered an incorrect cubicle and installed a jumper at the wrong location which led to the inadvertent transfer.

Savannah River Tritium Enterprise (SRTE): Last month an operator performing the helium leak rate testing on a group of units identified that the recorded leak rate was identical for consecutive units, which is abnormal and unexpected. The operator informed their management which initiated an investigation into the unexpected results. They determined that the background leak rate was recorded as zero for every test since the apparatus was installed in October when it was replaced with an updated model. Engineering personnel previously evaluated the replacement and determined that it could be considered a "like for like" replacement without further analysis. However, the software was not evaluated or updated for the new apparatus. Therefore, the software did not account for firmware updates and minor differences in the sequencing of the apparatus. This resulted in the software recording the background leak rate at the incorrect time. The same model of the apparatus has been successfully used in other areas without issue as the leak rate is calculated manually without the assistance of the software. SRTE personnel are in the process of developing corrective actions.