

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 27, 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 27, 2023

Board Activity: Chair J.L. Connery was on site this week to meet with NNSA-SRFO and DOE-SR regarding SRS landlord transition, federal staffing, and federal oversight. The Chair also conducted walkdowns of the Defense Waste Processing Facility (DWPF) and H-Canyon. She was accompanied by DOE-SR and contractor personnel on the walkdowns where she discussed the ongoing conduct of operations issues at DWPF and the near-term projects at H-Canyon.

Savannah River Tritium Enterprise (SRTE): SRTE personnel submitted the annual update of the Co-Located Worker Dose Reduction (CLWDR) Strategy to NNSA-SRFO. This effort began in 2018 with the goal of identifying opportunities to reduce the very high mitigated calculated dose consequence associated with several accident scenarios to the co-located worker. The contractor has been pursuing nine initiatives but has recently proposed pausing or descoping three of the initiatives. The Hydrogen-Tritium Thermal Cycling Absorption Process (HT-TCAP) Seismic Tritium Confinement System (STCS), which could potentially isolate hydride feed beds from the rest of the facility process following an earthquake, has been paused pending the resolution of the potential upgrade to the existing (currently general service) STCS. SRTE has also removed the 233-H stack upgrade initiative and the Tritium Extraction Facility STCS from the list of potential improvements. SRTE personnel justified removing the 233-H stack effort by stating that the safety improvements (i.e., dose reduction) would also be dependent on upgrading other support systems such as the ventilation system, diesel generators, and fire suppression system, which would not be cost effective. Additionally, SRTE personnel stated that adding the TEF STCS would not address any existing accident scenarios with high consequences. SRTE personnel are awaiting a response from NNSA-SRFO on their proposed path forward. The CLWDR strategy is the subject of an ongoing Board technical staff review effort.

SRMC Oral Board: The resident inspectors observed final oral boards at Saltstone and Tank Farms. The line of questioning was appropriate, and the board members conducted the board and grading of the board per the procedure. Both candidates seemed well prepared.

Salt Waste Processing Facility (SWPF): The contractor completed a readiness assessment for phase one of the Next Generation Solvent flowsheet. The new solvent will increase the removal of radioactive cesium. Phase one includes tie-ins of the boric acid and the caustic scrub systems to support the flowsheet changes. The contractor readiness assessment team identified two findings, which were corrected on the spot, and nine opportunities for improvement.

Startup Notification Reports: The contractors submitted their startup notification reports to the DOE-SR and NNSA-SRFO field offices. These included the H-Canyon dissolution of Fast Critical Assembly material projected to start in January 2024, the Savannah River National Laboratory Mark-18A target material recovery project that is projected to start up in May 2024, and the new consolidated SRTE safety basis document (limited scope) in September 2024.