

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 6, 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 6, 2023

**E-Area:** Solid Waste Management personnel removed and surveyed the standard waste box (SWB) that was recently returned to SRS from WIPP due to their detection of 46 dpm alpha while venting the inner containment vessel in September 2022. The team was well prepared and professionally executed the mission over two days this week following months of training and mock-ups. Radiological Protection Department (RPD) personnel conducted extensive surveys and air samples with no alpha or beta/gamma contamination detected. Throughout the evolution, the resident inspector observed strong procedural compliance, good communications, and excellent coordination between the four primary working groups assigned to the task.

**Savannah River Tritium Enterprise (SRTE):** Last month, SRTE control room personnel identified an unexpected pressure increase on one of the feed beds for the Thermal Cycling Absorption Process. After investigation SRTE personnel determined that hot and cold nitrogen system was leaking into the feed bed. Since the discovery, RPD personnel have been performing periodic surveys of the affected area in addition to operations personnel minimizing pressure in the feed bed to limit tritium migration. On Friday, SRTE personnel began to heat the feed bed to drive off the remaining tritium and capture it via the primary and purge stripper systems. SRTE personnel anticipated a small amount of tritium to be released out of the exhaust stack as this evolution occurs; however, they conservatively prepared for a significantly larger than expected release. SRTE personnel issued a precautionary remain indoors protective action for all personnel within the SRTE fence in addition to instructing non-essential personnel to work from home. SRTE personnel have also been in discussion with SRNL atmospheric services to confirm that a deep temperature inversion would not be present at the time of release to minimize the risk of tritium being pulled back into building ventilation systems like the event on January 30, 2022. SRTE personnel have also reached out to the surrounding organizations to inform them of the planned release although no protective actions were expected to be necessary. SRTE observed the real-time stack monitoring during the initial release and will continue to monitor it through the completion (expected to be complete on 10/7/23).

**Defense Waste Processing Facility (DWPF):** DWPF management are planning to enter a period of deliberate operations with 24/7 Senior Supervisory Watch on Monday morning due to the series of conduct of operations (ConOps) issues since February. Most recently, a control room operator (CRO) failed to perform multiple procedure steps including valve alignment when attempting to transfer waste chemicals from the Sodium Permanganate Feed Tank (SPFT) dike to the Recycle Collection Tank (RCT). Due to the missed valving, the CRO unintentionally transferred the waste chemical into the SPFT for a short duration before noticing the error and halting the transfer. The transfer did not result in any chemical compatibility issues. The issue investigation meeting revealed several ConOps failures. Most notably, the CRO pulled the control room procedure for the transfer but stamped it as “information only” and did not perform several of the steps including the step to request field operators to complete the valve line-up.