

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 30, 2022

TO: Katherine R. Herrera, 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 December 30, 2022

Event Investigations: Savannah River Nuclear Solutions (SRNS) in coordination with Savannah River Mission Completion (SRMC) and Battelle Savannah River Alliance (BSRA), drafted a revision to the site-wide procedure and checklist for conducting event investigations. The revision includes changes that address several non-compliances with DOE Order 422.1 identified by the resident inspectors (RIs). Changes include improvements in identification of the responsible manager and their responsibilities, protection against bias, and additional training and qualification requirements for all issue investigators. The revised documents represent an improvement in the site process resulting from a significant joint effort to bring the program into compliance. The draft revision is out for comments to relevant site personnel, which are scheduled to be incorporated in the coming weeks. Meanwhile, SRNS personnel are in the process of developing the necessary training materials for Issue Investigation Directors. The training is planned to incorporate the process changes, including protecting against bias and its impact on investigations, through several scenario-based exercises. The resident inspectors plan to review the training materials and attend some of the training sessions. SRNS is planning to implement the revised procedure and checklist in March 2023.

Defense Waste Processing Facility (DWPF): The RIs conducted a walkdown of fire barriers at DWPF and raised multiple concerns related to fire protection engineering (see 12/2/2022 report). SRMC fire protection engineering personnel have taken appropriate actions to resolve the issues including adding required signage to fire barriers, completing repairs to non-closing fire doors, and inspecting fire penetrations to ensure the installation is compliant with the original design. The RIs questioned how these legacy fire barrier issues were not identified as part of the annual fire protection inspection walkdown. As a result, fire protection engineering management is revising the procedure for the annual inspection walkdown to include additional detail on expectations.

Savannah River Tritium Enterprise (SRTE): On December 21, 2022, the Tritium Extraction Facility (TEF) and Tritium Facilities (TF) entered the Potential Inadequacy in the Safety Analysis (PISA) determination process due to an error discovered in the Consolidated Hazard Analyses (CHA) pertaining to Material at Risk (MAR) calculations for the Mass Spectrometer capillary tubes. An engineer performing a review found that a non-conservative value for the density of tritium was used in calculations for both the TF and TEF safety bases. Tritium management instituted conservative operational restrictions in all Tritium facilities following the PISA declaration. To support the Unreviewed Safety Question (USQ) process, SRNS personnel revised a calculation to establish an updated technical basis for a lower value of MAR that could be released. Therefore, the USQ evaluation was negative. No safety basis document changes are required as a result of this situation.