

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 1, 2024

TO: Timothy J. Dwyer, Technical Director

FROM: L. Lin, Z.C. McCabe, and E.P. Richardson, Resident Inspectors

SUBJECT: Savannah River Site Activity Report for Week Ending March 1, 2024

Staff Activity: Members of the Board's staff Q. Boney, J. Flora, D. Montierth, and R. Wu were onsite to perform preparations for upcoming reviews at H-Canyon and the Defense Waste Processing Facility (DWPF). P. Natividad and E. Tetteh were onsite to complete Radiological Worker requalification. J. Abrefah was onsite to attend the annual Material Identification and Surveillance conference at the Savannah River National Laboratory.

H-Canyon: After identifying numerous errors and omissions related to critical safety limits and safety basis related procedures, DOE has suspended the Fast Critical Assembly federal Readiness Assessment for the Safety Basis and Criticality Safety functional areas. Overall readiness cannot be declared until the two problem areas are re-performed. Due to the number of issues identified, SRNS plans to revise the H-Canyon safety basis and re-submit it to DOE.

DWPF: A control room operator added sodium permanganate to a process vessel without using the required procedure and then falsified records related to the event. SRMC self-identified the issue using plant data and addressed the employee performance issue. This event occurred despite DWPF being in a deliberate operations mode since 10/9/2023 following an extended series of conduct of operations events.

L-Area: A 20-ton research reactor cask holding uranium-based spent nuclear fuel fell approximately 1.5 meters off a flatbed truck as it was being moved within L-Area. The cask meets the requirements of Type B shipping container and is designed to withstand a drop from 9 meters. Thus, L-Area personnel and the cask owners do not expect the fall to challenge the integrity of the cask. Personnel have not detected any contamination in the accessible areas outside the cask and there were no injuries. Since they were unable to survey under the cask, L-Area personnel posted the area immediately around the cask as a contamination area with <1000 dpm beta/gamma and <200 dpm alpha contamination as a precaution. Additionally, they placed a tarp and sandbags over the cask. L-Area is not staffed during the back shift, however, K-Area personnel performed surveys of the area every four hours during the backshift to monitor for contamination. SRNS personnel have established a "war room" to plan recovery actions to work concurrently with the formal investigation they have initiated. All cask movements, including the recovery actions, are on hold until the investigation is completed. The efforts currently underway include developing a preliminary critical lift plan for the recovery of the cask, developing supporting structural mechanical calculations to ensure the abnormal lift can be successfully performed, investigating the ground surrounding the cask with ground-penetrating radar to detect any underground utilities that might be impacted by a heavy crane, and developing a plan for soil and groundwater sampling. An added complication is a similar cask is currently in the facility transfer bay with the lid bolts removed. This other cask will likely need to be processed prior to the completion of the recovery actions which will include inspection of the fuel elements within the fallen cask in the transfer bay.