DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 22, 2025

TO: Technical Director
FROM: Savannah River Site Resident Inspectors
SUBJECT: Savannah River Site Activity Report for Week Ending August 22, 2025

High Flux Isotope Reactor (HFIR) Carrier: L-Area recently implemented a new design of the HFIR fuel carrier bales to ship certain types of spent nuclear fuel to H-Canyon. The new design improves the dissolution process in H-Canyon. After shipment, personnel discovered that they had not performed a required Transportation Safety Question (TSQ) screen prior to using the new carriers to transport the fuel from L-Area to H-Canyon. Personnel called a timeout and notified H-Canyon personnel, and H-Canyon personnel stopped all dissolution activities. Facility personnel for both facilities performed extent-of-condition (EOC) reviews**.** H-Canyon personnel discovered that they also had not documented the required Unreviewed Safety Question screen of the new design prior to shipment. Personnel took immediate action to complete all required documentation for the new HFIR carrier. As part of the issue investigation's corrective actions, the EOC review**s** will also look at other recently implemented design changes and ensure that all appropriate documentation has been completed. During the issue investigation, personnel noted that the need for a TSQ prior to shipment was only informally discussed over email between the design authority engineer and the transportation coordinator, but no documented evaluation was initiated to support the new design.

H-Tank Farm (HTF): During liquid waste transfer and well water addition operations at HTF, operations personnel received a high-level alarm on the High Liquid Level Conductivity Probe (HLLCP), indicating liquid had contacted the HLLCP. The HLLCP is set at 170 inches in tank 14 to prevent exceeding the tank fill limit and support credited flammability controls. In response to the alarm, operations personnel performed an initial investigation and observed that radar level measurement inside the tank indicated a liquid level of 146.1 inches. Personnel secured the well water addition to tank 14 and entered the applicable Limiting Condition for Operation (LCO). After the cessation of well water additions, the HLLCP alarm cleared. Camera inspections of tank 14 indicated that the liquid level was very close to the HLLCP and had likely contacted it due to rippling caused by the well water additions. Facility personnel verified the liquid level manually using a steel tape and found it to be 168.7 inches. Personnel conducted an issue investigation, and determined that the reliance on inaccurate radar level indications led operators to fill the tank over the administrative limit of 158 inches (i.e., 12 inches below the HLLCP). They also determined that the incorrect liquid level indication from the radar was due to the initial calibration being performed on a dry salt layer of nonuniform height in the tank. The issue investigation team discussed potential corrective actions, such as verifying the tank level using steel tape and cameras until a uniform liquid level is established above the nonuniform salt layer, at which time the radar can be accurately calibrated. The radar level can then be utilized to ensure administrative level setpoints are maintained to avoid inadvertent LCO entries due to high tank levels. Since the issue investigation, facility personnel have lowered tank 14 level to 160 inches, exited the LCO, and initiated mixing activities in tank 14. Facility personnel are performing additional extent of condition reviews to determine if radar level detection equipment, used on other tanks, are properly calibrated to ensure accurate level detection during future planned evolutions.