

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 24, 2018

TO: Christopher J. Roscetti, Technical Director
FROM: Z. C. McCabe, Resident Inspector
SUBJECT: Savannah River Site Activity Report for Week Ending August 24, 2018

Staff Activity: D. Cleaves of the Board's technical staff was onsite for resident inspector augmentation and site familiarization.

Tank Farms: Tank Farms personnel held a fact finding meeting for an inadvertent transfer of liquid during a nitric acid cleaning of the Extraction Contactors at the Modular Caustic Side Solvent Extraction Unit (MCU). A valve out of position led to approximately 10 gallons of liquid being transferred to the MCU Hydraulic Accumulator instead of through the expected path to the Drain Collection Tank. The cleaning activity was secured after approximately 10 minutes when the Shift Operations Manager observed an unexpected rise in level in the accumulator. The fact finding revealed that the cause of the event was a failure to comply with the procedure. The personnel who attended the prejob brief noted that Contactor Tank #7 would not be involved in the cleaning. This led the First Line Manager to mistakenly direct the operators to not manipulate the Extraction Contactor #7 Aqueous Outlet Isolation Valve to the closed position, leading to an improper valve lineup at the start of cleaning activity. Engineering and Operations staff are developing a path forward to remove the nitric acid from the hydraulic accumulator.

L-Area: The "Fuel Criticality Rules" procedure dictates the requirements that ensure L-Area personnel handle fuel in a way that is consistent with the documented criticality safety controls. The procedure also specifies the location of several criticality safety blocks, a safety significant passive design feature credited to prevent unwanted interactions between fuel and other material that could lead to an inadvertent criticality. Due to recent issues (see 7/27/18 and 8/3/18 reports), L-Area personnel have revised this procedure to require approval of criticality safety for the removal of any block that is not procedurally driven. However, if L-Area personnel removed a blocking device, the procedure only directs them to record the change in an attachment, rather than update the table specifying the location. This could lead to the block not being in place when needed if it is not replaced before a subsequent evolution or if a concurrent evolution takes place while it is down. As part of the implementation efforts for the revised procedure, L-Area personnel removed more than half of the blocks listed and replaced most of them with new blocks the following day. L-Area management precluded any issues during this period by disallowing any fuel handling until the blocks were in place according to the revised procedure and verified. The revised procedure also now requires any blocking device removed to be replaced before the end of the shift which would prevent an issue with fuel handling evolutions in series. However, this would rely on L-Area management to ensure no necessary blocks were down if evolutions were happening concurrently.

H-Canyon: Preliminary calculations (estimates) for H-Canyon inventory were outside of the expected range because engineering did not account for material in the decanters. The issue was resolved and material accounted for approximately 1-1/2 months from the identification of the issue. Among other shortcomings, SRNS personnel noted that engineering should have been involved sooner which could have led to a quicker resolution.