

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 18, 2016

TO: S. A. Stokes, Technical Director
FROM: M. T. Sautman, D. L. Burnfield, and Z. C. McCabe Site Representatives
SUBJECT: Savannah River Site Weekly Report for Week Ending March 18, 2016

Board member Bruce Hamilton visited 14 SRS defense nuclear facilities. As of today, D. Burnfield completes his assignment as Site Representative and reports to the Nuclear Weapon Programs group.

F-Area: On 3/7/16, facility maintenance was directed to perform preventative maintenance (PM) on the Fan Temperature Switch (FTS) in the 254-13F B-Train Diesel Generator Room. This FTS is classified as general service. During the PM, maintenance found that the breaker was in the off position, and the FTS failed. When maintenance completed the task, they returned the breaker to the off position. During rounds on 3/14/16, an operator noticed that the power light was out for the safety significant (SS) FTS in the B-Train Electrical Room. SRNS then determined that the maintenance team had performed the PM on the wrong switch. In fact it was the SS switch that had failed, and the SS breaker had been in the off position for possibly more than a month. During the fact finding meeting, numerous corrective actions were identified including: preparing a non-conformance report on the switch, performing troubleshooting on the breaker to find out why it was found in the off position, briefing the workforce on the hazards associated with working on the wrong piece of equipment, and correcting the work package that allowed this mistake to occur.

Tank Farms: SRR added additional water to the 3H evaporator pot, adjusted the liquid level, and observed the liquid level trends over time to try to better define where the leak might be located. While the trend data are inconclusive, the leak appears to be located in the vicinity of the steam chest. SRR hopes to do a visual inspection of the evaporator pot interior (and possibly apply a dye penetrant) in early April. Meanwhile, SRR has dissolved much of the salt on the cell floor and is cleaning the exterior of the pot, which will decrease dose rates. SRR is no longer evaluating whether it would be feasible to operate the evaporator with a leak based on the likely location of the leak.

Separately, on 3/13/16 SRR entered Limiting Condition for Operation (LCO) 3.8.1A for Tank 30 when purge ventilation was shut down. This LCO precludes liquid additions into the tank and is in place to limit potential hydrogen generation. On 3/16/16 SRR management directed the shift operations manager to lower the water level in the 3H evaporator pot. Since SRR was working on the jet for the primary drop tank (Tank 37) a control room operator (CRO) chose to drop to Tank 30, forgetting that the LCO was in force. After the liquid addition was made, the CRO realized that a mistake had been made and self-reported the error. Hydrogen levels were below the limiting values. SRR has taken specific actions to reduce the likelihood of a similar error from occurring. In addition, tank farms has entered deliberate operations, established senior supervisory watches, and will enter a stand down where the staff will be briefed on recent operational events.

Defense Waste Processing Facility: SRR is proposing that they discontinue their use of two models that 1) predict the composition of calcine gases released from the melter cold cap and 2) use a dynamic model to predict the response to melter surge events. The new approach would use a simpler approach to estimate the production of flammable gases in the cold cap, and use a steady state model instead of the dynamic model (see 8/3/15 Board letter).