

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 18, 2014

TO: S. A. Stokes, Technical Director
FROM: M. T. Sautman and D. L. Burnfield, Site Representatives
SUBJECT: Savannah River Site Weekly Report for Week Ending July 18, 2014

Todd Davis was onsite this week to provide site rep coverage.

Tritium Extraction Facility (TEF): Power and ventilation were lost at TEF during execution of a preventive maintenance procedure for a switchgear main breaker. The scope of this maintenance activity included facility personnel attempting to isolate and remove the main breaker associated with switchgear #2. These personnel inadvertently used the wrong section of the procedure and mistakenly isolated switchgear #1 such that both electrical busses were being fed through switchgear #2. The facility lost power when personnel subsequently opened the 13.8 kV feed to switchgear #2.

The backup power diesel generator started up as designed and operations personnel followed the facility abnormal operating procedures for loss of power and ventilation as required. Due to a smoke smell (later identified to be from the diesel generator), the fire department was notified, responded within approximately five minutes, walked down the facility, and declared the facility all-clear. Facility operations personnel subsequently returned the facility switchgear to the normal configuration and restored normal power. Tritium management is evaluating this event to identify appropriate corrective actions.

Tank Farms: While flushing the Tank 51 purge exhaust reheater, SRR personnel identified liquid leaking from the reheater, which is part of the safety-class boundary. Tank farm personnel entered the appropriate limiting condition for operations associated with impacts to the exhaust system boundary. The reheater reduces the moisture entrainment impacts on the HEPA filters in the tank purge exhaust system. Over an extended period, the reheater coils can build up waste material such that there is a high external dose rate around the reheater. A flush with water is performed infrequently when the dose rate is excessive. Immediate actions were taken to torque the leaking reheater closure port and perform a smoke test, the results of which were satisfactory. During investigation of this event, SRR personnel also identified that sealing tape had been used around the closure port. Tank farm management is evaluating improvements to the flushing procedure and reviewing the use of sealing tape on the reheater safety-class boundary.

SRR excavated a section of high-level waste transfer line in F-Tank Farm that did not pass a pressure test during a routine integrity testing surveillance. Based on visual examination, the pipe wrapping that provides protection from underground environmental impacts was damaged, which allowed corrosion to occur that resulted in through-wall corrosion of the carbon steel jacket. SRR personnel are conducting additional ultrasonic testing to determine whether a repair or replacement of this jacket section is warranted.

Modular Caustic Side Solvent Extraction Unit (MCU): During MCU startup last weekend, an operator mistakenly opened a caustic bypass valve instead of ensuring the valve was closed per the procedure. This action caused the caustic wash tank to fill faster than normal, which led caustic solution to overflow into the sump. Once MCU control room operators identified the overflow, appropriate actions were taken to secure the caustic flow. During the fact-finding meeting, tank farm management identified that the step to ensure the valve is closed is located near another step in the procedure that requires several valves to be opened. Procedure improvements are being considered to reduce the potential for operator error.