

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 23, 2019

TO: Christopher J. Roscetti, Technical Director
FROM: M. T. Sautman, Resident Inspector and L. Lin
SUBJECT: Savannah River Site Activity Report for Week Ending August 23, 2019

Ms. Leigh Lin provided resident inspector (RI) support while Mr. McCabe was on leave.

Tritium: A staff member observed a night shift drill at the Tritium Extraction Facility (TEF) that simulated an explosion of a tank in a glovebox. During the drill, the Fire Department (FD) encountered heavy radio traffic, the communication of an injury between the field and control room was not timely, and Radiological Protection Department personnel had difficulties identifying the correct stay time for FD responders.

After loading a charge vessel, a worker inappropriately N/A'ed a step to change the position configuration back to component loading. Subsequent visual inspections of the loading line were only conducted from the front of the box and this is visible only from the back of the box. This led to a component not being loaded and the empty component being welded before the error was discovered. In addition to this event, other recent conduct of operations issues include the improper handling of a reservoir (see 7/12/19 report), a loss of ventilation at TEF (see 8/2/19 report), and a surface defect that was caught by the supervisory inspection after it had went through the quality verification inspection process. In response, SRNS entered an operational pause to brief all shifts on the recent issues, emphasized the importance of good conduct of operations, and will be conducting senior supervisory watches and a common cause analysis.

HB-Line: A few minutes after SRNS began draining 64% nitric acid from a sixth level cold feed tank to a third level H-Canyon receipt tank, workers noticed that acid had backed up a fourth level floor drain and noticed fumes coming out of the Decon Room shower floor drain. The transfer was stopped after ~300 liters of acid had been drained. Subsequent monitoring found nitric acid levels in the Decon Room which were 5 times the level that requires respiratory protection. Workers later cleaned up the liquid around the floor drain wearing a plastic suit and chemical personal protective equipment. SRNS is investigating why the acid backed up.

Salt Waste Processing Facility: During the loss of Basic Process Control System off standard test, exhaust fans shut down while air handling units continued to operate. This caused the facility to pressurize and activated Safety Instrumented System alarms. Parsons is investigating.

F/H Laboratory: Last September, the High Level Drain Exhaust (HLDE) vacuum was found out of range. In November, maintenance workers fixed an air leak, but this did not return the reading within the required range. Unplanned work orders do not require post-maintenance testing and the shift operations manager closed the work order. Between November 2018 and August 2019, the HLDE vacuum readings and HLDE high efficiency particulate air (HEPA) filter differential pressure readings continued to worsen. While the out-of-range readings were consistently red circled on round sheets, neither the operations staff nor systems engineer took action. Two weeks ago, a low pressure HLDE alarm caused all lab modules to be evacuated. Engineers are investigating why the HEPA filters needed to be replaced two years early.