

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 15, 2017

**TO:** S. A. Stokes, Technical Director  
**FROM:** M. T. Sautman and Z. C. McCabe, Resident Inspectors  
**SUBJECT:** Savannah River Site Resident Inspector Report for Week Ending Sept. 15, 2017

**Severe Weather:** SRS was closed to non-essential personnel Monday and Tuesday due to tropical storm Irma. Facility and site infrastructure personnel had spent days preparing for the severe weather and damage was minimal.

**H-Canyon:** The operability of a safety class (SC) high temperature interlock for an evaporator vessel (credited to prevent red oil explosions) was indeterminate when the H-Canyon personnel exited the limiting condition for operation (LCO) condition that is required when the system is inoperable. Maintenance personnel began locking out electrical power to two panels in the control room for an unrelated task. The chart recorder (also SC) for the interlock is on one of the panels. Because electrical drawings associated with the panels were unclear, H-Canyon personnel were not certain that de-energizing the panels would affect the SC recorder. As a precaution, H-Canyon personnel entered the aforementioned LCO condition prior to de-energizing the panels. Maintenance personnel determined that the breaker they opened did not completely de-energize the component on which they were trying to work. They then restored power and halted further work on their task. H-Canyon personnel failed to recognize that toggling the power to the panel caused the SC interlock (fails safe in a loss of power) to activate and lock in. The interlock alarm light illuminated when the panel power was restored, but the audible alarm did not sound. H-Canyon personnel did not fully inspect the panel after the power was restored and verified that the tank temperature was within the acceptable range via the general service distributed control system, which controls a separate un-credited interlock. During rounds the following shift, an operator noted that the recorder read "XXXXXX," a reading the operator did not recognize. H-Canyon personnel determined that the recorder and interlock were in an indeterminate state and re-entered the LCO condition. H-Canyon personnel were not able to reset the interlock and continue to troubleshoot.

**Defense Waste Processing Facility:** Three of the six Safety Grade Nitrogen (SGN) system tank discharge valves are leaking from the valve bonnet gasket. SRR noticed one leak in February when it was very minor. That leak worsened and the other leaks began when SRR started using this system three weeks ago (see 8/25 and 9/1/17 reports). SRR has decided to replace the tank discharge valves from all six tanks due to similar service. SRR was able to maintain adequate nitrogen supplies during the severe weather and repairs to the primary purge system continue.

**F/H Laboratory:** Last Friday, an electric pole crossarm failed causing a phase-to-phase fault and a breaker to open at the substation. The general service standby diesel generator started, but the automatic transfer switch (ATS) failed to pick up the load. As a result, all of the main exhaust fans and air handling units for Building 772-F (the original laboratory building) shut down. The shift operations manager evacuated 772-F and utilities personnel re-energized the feeder in about 45 minutes. Radiological surveys did not find any spread of contamination. The causes for the crossarm and ATS failures are under investigation. Visual inspections did not identify any degradation of the cross arm or ATS nor were any external factors present.