

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 18, 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 August 18, 2017

**Building 235-F:** In the five years since Recommendation 2012-1 was issued, removal of material-at-risk (MAR) from the cells has been limited to 1-1/4 drums of equipment (e.g., lamp, bracket, cords, metal pieces) from cell 6 and some vacuumed dust from cell 7. Most of the field work in the last 12 months has been limited to window repair and removal, enhanced characterization of cells 1 and 2, and electrical isolation of cells 3 – 5. The recent vacuum demonstration lasted ~90 minutes and consisted of putting the vacuum inside the cell, turning it on briefly, and changing its filter. SRNS has been struggling since 2016 to reduce the vacuum inside the cells so that it is easier to bag out waste without the bags being sucked in. Fiscal year 2018 work is likely to be limited to more preparation and characterization work, but little MAR removal. At this time, there is not a viable path to completing the deactivation of cells 1 through 9 by the milestone date of 1/31/20. DOE is hoping the enhanced characterization results will support an alternate path of fixing the Pu-238 and grouting the cells.

**H-Canyon Exhaust (HCAEX) Tunnel:** DOE-SR approved the evaluation of the safety of the situation (ESS) for HB-Line for the HCAEX Tunnel potential inadequacies in the safety analysis (see 6/30/17 report). The ESS allows the addition of a limited amount of small Pu standards and Pu fuel plates to be allowed into the facility. HB-Line personnel will be receiving Pu fuel plates in 9975 shipping containers, which prevent any material release, and repacking them into multiple 9975 shipping containers. The time this repacking will take is very short. SRNS personnel also restarted the alternatives analysis for the HCAEX Tunnel this week. The SRNS team is tasked with developing and evaluating potential replacement options should the ongoing HCAEX Tunnel evaluations determine replacement is necessary.

**L-Area:** Disassembly basin water passes through sand filters and returns to the basin. Booster pumps send part of the water exiting the sand filters through a zeolite system, cation and anion vessels and resin traps before it is returned to the basin. Earlier this month, SRNS completed replacing the resin in train B of the deionizer system. During this outage, SRNS also needed to conduct the annual sump level checks before resuming deionizer system operation. During this pre-job, the first line manager told the operators to use deionizer train B, however, the shift operations manager later decided to switch to deionizer train A. The operators were informed of this change. Unfortunately, one of the operators was so fixated on "train A" that he aligned the booster pump with sand filter train A, which was in standby, rather than sand filter train B. The operators did not notice this misalignment because their system readings were within the acceptable range. The reason for this is that the pump's suction was pulling water in the reverse direction through what was normally a discharge path. "Normal" readings continued for nine days, however, pumping unfiltered water through the zeolite system started to clog it and reduce the pump's discharge flow rate. The first day the flow rate was below the acceptance range, the operator did not red circle the out-of-range value. The next day, a different operator noticed that the discharge flow rate had dropped quite a bit more. Upon further investigation, he determined that the pump had started to cavitate and the pump was aligned to the wrong sand filter train.