**DEFENSE NUCLEAR FACILITIES SAFETY BOARD**

May 2, 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 May 2, 2014

**Savannah River National Laboratory:** The current fire water supply system is approximately 60 years old. The system is showing signs of aging, does not meet flow and pressure requirements, does not comply with the National Fire Protection Association code, and is hard to maintain. DOE recently approved funds to design and build a new fire water system including fire pumps and fire water supply tank.

**Saltstone:** The grout line to the vaults uses grooved couplings. SRR has identified out-of-tolerance grooves on not only field fabricated sections of the grout line, but also with some of the vendor-manufactured grooves. SRR is currently pursuing a conditional release strategy for these grooves that would include personnel access restrictions and visual inspections for processing runs.

**Plutonium Disposition:** DOE directed SRNS to resume down blending of plutonium in HB-Line later this year and to start down blending in K-Area next year.

**H-Canyon:** SRNS credits the instrument air system with providing air supply to actuate the canyon exhaust fan discharge dampers. Instrument air passes from the compressors through a set of air dryers to allow dry air to be stored in the receivers. Last night the #2 instrument air dryer failed to properly switch drying towers. Because of the failure to properly switch between drying towers, the instrument air header pressure dropped below the 57-psig alarm set point. The facility entered the alarm response procedures, which required that they place a portable compressor online, and isolate the instrument air dryer. This action resulted in the pressure returning to normal (90-psig).

**Solid Waste Management Facility (SWMF):** Radiological Protection Department (RPD) personnel normally perform random contamination smears on waste containers stored on SWMF pads. RPD personnel found a contaminated smear reading ~286 dpm/100 $cm^2$ α (corrected for radon decay) during one of these surveys. The RPD inspector backed out of the area, dressed out in the appropriate anti-contamination clothing, posted the area appropriately, and reentered the area to perform a more detailed survey of the drum in question. The RPD inspector found ~1,000,000 dpm α by direct probe near the previously installed vent filter. RPD determined that the isotope of concern was $^{238}Pu$ via alpha spectroscopy. The drum was later successfully over packed into an 85-gallon drum and SRNS employees are checking other drums for similarly configured filters.

**Modular Caustic Side Solvent Extraction Unit (MCU):** SRR is troubleshooting three issues associated with the operation of MCU. The first of these problems is the accumulation of solids in the contactors. SRNL found sodium oxalates present in scrape samples from the #1-extraction contactor. SRR has found solids with a similar appearance in the #2-scrubber contactor. The drain in the #1-extraction contactor is plugged and as of today, SRR's efforts to unplug the drain have been unsuccessful. The second problem uncovered by SRR is unusual wiring problems. SRR has performed testing of the wiring from the fuses to the motor and found no issues that would have caused the problem. SRR must defer similar troubleshooting to the Variable Frequency Drive until they can lift the lockout for the contactors. The third problem is that during the last attempt to process high levels of Isopar® and sodium were observed in the strip effluent hold tank. SRR engineering will develop a path forward once they resolve the other two issues.