

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 5, 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 September 5, 2014

HB-Line: The site rep reviewed the calibration and maintenance history of the precipitator's capacitance level instrument (see 8/29/14 report). This instrument was last calibrated in 2008 and the site rep questioned the decision to go to a 10-year calibration frequency considering that this instrument failed its calibration in 2003, 2004, 2005, 2006, and 2007. Maintenance was also repeatedly performed during that same period because of bad input/range alarms and inaccurate readings. After discussions at a post-job review, SRNS will bypass the agitator interlock that is triggered by a bad input/tank level error alarm from this instrument and is evaluating whether guidance needs to be added to their procedure(s) to clarify that the agitator is to remain on once oxalic acid has been added. The site rep also encouraged engineers and operators to make sure they communicate unexpected results in the control room because the capacitance level instrument was already reading 18% higher than expected before the oxalic acid addition began and it is not clear from logbook entries whether everyone in the control room realized that the agitator was shut down due to a tank level error alarm and not the tank high level alarm.

An SRNS engineering analysis recommended that the glovebox Halon systems be changed to automatic activation in accordance with National Fire Protection Association (NFPA) guidance on Halon systems and that the rest of the Halon systems be replaced with automatic sprinkler systems.

DWPF: SRR analyzed fire pump test data from 1991 – 2014. Neither the electric or diesel fire pumps satisfied NFPA performance monitoring criteria. At the rated operating flow, the electric pump performed 9.2% below design capacity and exhibited a general negative trend in performance, especially at run-out flows. Similarly, the diesel pump performed 10.8% below design capacity and had a significant reduction in performance between 2013 and 2014. Furthermore, SRR concluded there is inadequate margin between the supply system curves and the evaluated suppression system demands to account for expected fluctuations in the water supply performance (see 7/11/14 weekly report).

H-Canyon: SRNS resumed charging of plutonium bundles in a dissolver. The acid in this dissolver is being evaporated at a higher rate than normal due to the continued use of pressurized air to keep a leaking cooling coil pressurized (see 2/1 and 2/8/13 weekly reports). SRNS issued a contract to purchase a replacement dissolver.

Tank Farms: Since early 2013, corrective maintenance in F-Pump Pit 1 and the associated transfer lines prevented the movement of high-level waste between F and H-Tank Farms (see 4/13/13 weekly report). With the exception of backfilling the excavation, SRR completed the maintenance and this week successfully transferred 60,000 gallons of waste to H-Tank Farm, where they have the processing capability.

The Tank 37 transfer jet is encased in the surrounding saltcake. Additional liquid is required to mine the salt surrounding the jet, and to free the occluded nozzles. Since the liquid level is now nearing the operational limit, SRR needed to raise the high-level liquid conductivity probe five inches above the normal operating band. The site rep reviewed the proposed response plan allowing this increase in the operating limit. SRR plans to have a sub-contractor clean the jet nozzles in the tank risers using high-pressure (< 10,000 psi) water. The site rep questioned how SRR would apply both engineered and administrative controls to preclude worker contamination and potential injury during the cleaning operation.