DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 23, 2015

TO: S. A. Stokes, Technical Director
FROM: M. T. Sautman, Site Representative
SUBJECT: Savannah River Site Weekly Report for Week Ending July 23, 2015

Saltstone: When SRR went to work on the peristaltic grout pump, they found that the rotor for one of the pump heads had sheared in eight spots and the pump casing was punctured. SRR will be replacing this grout pump with a spare one they had. SRR continues to investigate potential causes for this process upset (See 7/17/15 report).

HB-Line: SRNS resumed fissile material operations after extensive corrective actions (see 2/20, 2/27, and 3/6/15 weekly reports). The site rep observed a transfer of low plutonium concentration solution from a filtrate tank to an H-Canyon tank.

H-Canyon: DOE commenced their Readiness Assessment (RA) of the second uranium cycle operation. The site rep observed a transfer of solution from an H-Canyon evaporator to an outside tank, the simulated transfer of solutions for evaporation, and interviews of operations staff. The procedure for evaporator transfers requires the operator to write down the values for several tank parameters and calculate other values, much of which is subject to second person verifications. However, the operator chose to write down the targeted tank solution mass for stopping the transfer on a scrap piece of paper and when he did so, he transposed two of the numbers. As a result, he ended up transferring too much solution to the receiving tank during this simulated transfer. The pre-job briefing for this evolution was poor also. Level of knowledge interviews by the RA team identified several knowledge issues too.

In 2013, the general service lower coil in the dissolver used for plutonium metal developed a leak (see 2/1 and 2/8/13 weekly reports). In response, SRNS isolated the cooling water outlet, pressurized the coil with air, and operated the dissolver with just the upper cooling coils. Since the last time the dissolver was operated, the leak has worsened to the point that SRNS cannot maintain sufficient pressure to prevent the in-leakage of solution into the coil. SRNS depressurized the coils (which allowed them to fill with acid solution), removed the cooling water inlet jumpers, and installed gasketed dummies on the cooling water inlet nozzles to further isolate the coils. SRNS approved operating the dissolver for the next batch of plutonium metal because of 1) past experience with operating with just the upper cooling coil, 2) the negligible dose consequences from a cooling coil failure leaking into the segregated cooling water system, and 3) a calculation that indicates that only 15 g of plutonium is expected to diffuse into the coil. An offsite vendor is nearly finished building a replacement dissolver, but it will take several months to ship, complete onsite preparations, and install this new dissolver.

L-Area: Taking advantage of the availability of a legal weight truck cask, SRNS conducted a demonstration for members of the upcoming RA team. The site rep observed workers prepare to remove the cask from its container and place the fuel basket in the underwater carriage assembly.

Emergency Management (EM): DOE is developing performance based incentives for both SRNS and SRR to develop and execute an improvement plan for the EM programs.