

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 26, 2013

TO: S. A. Stokes, Acting Technical Director
FROM: M. T. Sautman and D. L. Burnfield, Site Representatives
SUBJECT: Savannah River Site Weekly Report for Week Ending July 26, 2013

Tank Farms: During a transfer from Tank 12 to Tank 51, the purge exhaust flow rate on Tank 12 fell below specified limits (See 7/19/2013 report). SRR personnel replaced the HEPA filters and have replaced the reheater with a spool piece to bring the flow rate within limits. When SRR inspected the reheater, they found some clogging of the unit. SRR has yet to determine the cause.

During a facility observation of F-Tank Farm, the site rep and DOE facility representative found anomalous gauge readings. (See 7/12/2013 report.) SRR has been following the increased level in the catch tank and now has determined that the catch tank is full and flow is backing up through the contaminated drainage system that normally feeds the tank and maybe flowing into the annulus of Tank 8.

Solid Waste Management Facility (SWMF): H-Canyon TRU waste personnel remediated waste from a TRU waste container and filled two daughter standard large boxes (SLB2s) with the remediated waste. The assay of the original container was < 500 plutonium-239 equivalent curies (PECs), but subsequent assays of the daughter containers measured ~4700 and 6200 PEC. Both of these PEC values exceed the Documented Safety Analysis limit of 2100 PEC for containers outside a concrete culvert. SRNS personnel state that these values also exceeded the limit for transporting containers between SWMF and H-Canyon and preclude further remediation in H-Canyon.

Defense Waste Processing Facility: After workers replaced and successfully tested a battery bank, an uninterruptable power supply failed when workers returned it to normal mode. This failure caused power to be lost to a field operating station, part of the distributed control system, for six minutes and trigger various interlocks. For instance, the safety-related gas chromatographs shut down, causing the slurry mix evaporator (SME) to stop processing. Melter feeding and pouring stopped when the primary off-gas system switched to the backup system. Furthermore, the process chillers and process cooling water systems shut down. During restoration, hundreds of gallons of cooling water also leaked to the floor drain catch tank and melter cell sump, which then alarmed. SRR is still investigating the cause of this event and exactly what happened afterwards.

H-Canyon: In order to remove equipment from hot canyon cell covers, workers are size reducing contaminated jumpers in the railroad tunnel. Because of their high dose rates, two jumpers were to be decontaminated and resurveyed prior to size reduction. However, these actions were not captured as prerequisites in the work package and a crane operator staged one of the jumpers for size reduction without it being resurveyed (which would have shown the decontamination was unsuccessful). When a radiological protection inspector walked by this jumper during a pre-work survey, his electronic personnel dosimeter alarmed because the dose rate was more than twice the suspension guideline.

HB-Line: SRNS commenced their Readiness Assessment (RA) for the implementation of their upgraded Documented Safety Analysis and the start of Alternate Feedstock Phase II processing. The site rep observed multiple performance demonstrations and interviews. At a pre-job briefing, the site rep questioned the plan to conduct the dumping, sampling, and loading out of plutonium oxide in a mockup where: 1) no radiological personal protective equipment (PPE) would be worn, 2) no radiological protection inspectors (RPI) would be participating, and 3) all radiological control action steps would be skipped. After discussions with facility management and the RA team, HB-Line decided to conduct the evolution with RPI participation and with workers wearing all of their hand PPE.