

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 19, 2013

TO: S. A. Stokes, Acting Technical Director
FROM: D. L. Burnfield, Site Representative
SUBJECT: Savannah River Site Weekly Report for Week Ending April 19, 2013

Sanjoy Sircar was on site this week assisting with site rep responsibilities.

Tank Farms: Tank farms personnel classify the waste tanks as Very Slow, Slow or Rapid Generation Tanks based on the time it takes volatile gases to reach the Lower Flammability Limit (LFL). This classification affects the controls used by SRR to prevent deflagrations in the tank headspace. Last week SRR determined that tank farms personnel had not updated the Curie concentration in the Waste Characterization System (WCS) for Tank 22 and based upon early calculations SRR should list Tank 22 as a Slow tank rather than a Very Slow tank. (See 4/12/13 report.) SRR is continuing to refine the calculations, and DOE is now concerned the calculations could provide evidence that SRR should list the tank as a Rapid Generation tank. In addition, SRR determined that Tank Farms personnel had not properly entered the inputs to Tank 39 from H-Canyon processing into WCS since 2008. SRR has corrected the inputs for Tank 22 and is reviewing the data for Tank 39.

The contractor performed a Readiness Assessment (RA) for dissolving salt waste in Tank 10 and transferring it to Tank 11 using an aboveground hose-in-hose transfer line. Even though Tank Farms personnel had performed a facility assessment covering the same operation, the RA team had a number of findings. Among these is the need to have a plan for determining whether any further accumulation of liquid in the Tank 11 annulus is due solely from ground water (see 3/29/13 and 4/5/13 reports) or from a potential tank leak. Both tanks have been known to leak in the past.

Tank Farm personnel continue to plan for the replacement of the failed pump pit (FPP-1) pump. Dose rates in some locations in the pump pit are approximately 300 rad/hour. In order to complete the task, SRR must remove a contaminated jumper to replace the gaskets. Since it will not be possible to sleeve the jumper, SRR constructed a windbreak to prevent the spread of contamination. SRR is evaluating the windbreak to determine if it is tall enough or will have to be replaced.

Defense Waste Processing Facility (DWPF): During the last several weeks, SRR has had 11 of the 12 available thermocouples fail in the melter pool. During replacement of thermocouples, SRR observed that one of the two thermowells housing the thermocouples had corroded and approximately 18 inches were missing. The other thermowell was intact. SRR replaced both thermowells and the attached bubblers, but the new thermowells only allow for a total of 10 thermocouples because of size.

The analysis of the transformer that failed and caught on fire (see 12/7 and 12/21/2012 reports) revealed that the fire resulted from winding faults on the primary side of the transformer and not the secondary side as had been expected. The cause of the failure was extended exposure to high temperatures. SRR performed an inspection of the replacement transformer, which was previously unused but of the same vintage as the original transformer, and found that the transformer was also operating at higher than expected temperatures. DWPF personnel installed a fan in the transformer in an attempt to reduce the temperature.