

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 5, 2016

TO: S. A. Stokes, Technical Director
FROM: M. T. Sautman and Z. C. McCabe Site Representatives
SUBJECT: Savannah River Site Weekly Report for Week Ending February 5, 2016

Emergency Preparedness (EP): One of the corrective actions resulting from the EP assessment conducted by SRNS in response to site rep observations was the creation of a Consolidated Drill Team. SRNS has begun staffing this new organization and approved a transition plan for transferring responsibility for developing and performing EP and conduct of operations drills to this new team. In addition, DOE approved additional staffing for the SRNS EP Program. This will support the improvement of recovery planning for emergency events. This includes benchmarking to identify best practices; defining a better recovery planning process for immediate, near- and long-term concerns and mitigation actions; and conducting tabletops and drills that focus on the recovery phase of an event. (See 10/10/14, 11/7/14, and 7/17/15 weekly reports).

Criticality Safety: A SRNS review identified that several samples from the HB-Line feed receipt, recycle, and filtrate tanks were analyzed with nitric acid concentrations outside the bounds provided in the procedure. High nitric acid concentrations can form plutonium (Pu) nitrate complexes that were not present in the calibration set and which result in an average negative bias of 5.2% for the reported Pu concentration. Two filtrate tank samples also had Pu concentrations above the prescribed range, but SRNS's analysis of the data did not find that this produced a bias in the results. When HB-Line transitioned from Phase 1 scrap recovery to Phase 2 Pu oxide production, SRNS decided to stop pretreating the samples with ion exchange because the new samples would not contain uranium. However, the analytical chemists reviewing the new campaign did not realize that skipping this step would result in samples whose acid molarity and Pu concentrations were not as consistent as those in the previous campaign. SRNS is changing how they are preparing samples to make them more consistent, revising their Conduct of Analytical Measurements Manual to improve the rigor of future assessments, and redoing their review of the current Pu analysis process to ensure it matches how they currently perform the analysis. (See 1/22 and 1/29/16 reports).

Maintenance: While many of the SRNS facilities were in an operational pause or in a deliberate operations mode, the corrective maintenance backlog and the number of preventive maintenance deferrals and delinquencies, unplanned fire impairments, and late fire system tests increased – in some cases sharply. Most of these negative trends are being reversed as work returns to normal.

Defense Waste Processing Facility: The site representative observed the decontamination of an impact wrench inside the remote equipment decontamination cell (REDC). The CO₂ blaster used to decontaminate equipment is located outside the REDC. The CO₂ blaster uses plant air to force dry ice pellets into a focused stream for decontamination. Per the decontamination procedure, the operator opened the airline leading into the CO₂ blaster to remove condensate water before any decontamination was performed. During the decontamination operation, the site representative noticed water leaking from the CO₂ blaster and a small puddle of water growing near his point of observation. The site representative informed the operator, who then stopped work and notified the first line manager (FLM). The FLM decided not to recommence blasting as he believed the wrench was decontaminated sufficiently. Although the airline was opened to remove condensate previously, the leaking water is believed to be from additional water from inside the airline.