

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 1, 2013

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 November 1, 2013

Fiscal Year 2014 Budgets: Both SRNS and SRR are facing significantly reduced budgets this year. SRNS is facing the same budget they did last year post-sequestration before funds were reprogrammed. The draft annual report for Recommendation 2012-1 identifies several commitments to the Board that are not supported by the available funds. SRR is living to the President's FY14 budget request, whose operational impacts have been previously discussed (see May 24, 2013 weekly report).

At SRNL, DOE and SRNS had previously agreed to a plan to make the fire water supply and sprinkler systems code compliant, close out two Justifications for Continued Operations (JCO), and upgrade the Documented Safety Analysis (DSA) to resolve several known weaknesses (see November 2 and 9, 2012 reports). However, budget restraints have suspended work on the DSA upgrade and fire sprinkler system modifications even though the JCOs will expire in 2014. SRNS will be submitting a baseline change proposal to fund completion of the DSA upgrade and sprinkler modifications and extend the JCOs to account for recent delays. However, since it is uncertain where these additional funds will come from, DOE is facing unattractive alternatives like long-term reliance on JCOs, continued reliance on non-compliant fire sprinkler systems, ignoring known meteorological and dispersion modeling issues, or curtailing planned operations.

Defense Waste Processing Facility (DWPF): Laboratory technicians prepare sample vials with cold chemicals to support future waste analysis. Because DWPF will not be operating for several weeks, technicians disposed the contents of a few hundred vials to avoid any chemical degradation of the vials. The chemicals (initially up to 16 Molar HNO₃, HCl, HF, H₂SO₄, H₃BO₃) are significantly diluted, poured down a laboratory drain, and then collected in a tank for treatment. While disposing of these chemicals, an apparent plug in the drain line caused the liquid to back up and overflow from cup sinks in two fume hoods in an adjacent laboratory. The liquid then filled up the lip around the hood floor and eventually spilled onto the laboratory floor. The diluted liquid still had a pH around 1 and had picked up $\beta\gamma$ contamination from the drain line (probing up to 180,000 dpm). Technicians noticed the spill as it flowed towards their doorway. The Fire Department's Hazardous Material Team entered the area to assess the spill and take photos. Facility personnel applied absorbent material at the doorway. Over the next few days, facility workers in acid suits and equipped with either fresh air hoods or respirators made entries into the two laboratory rooms to assess the spill, to take photos for recovery planning, to remove and neutralize the liquid, and to begin decontamination activities. The site rep observed recovery planning, hazard analyses, pre-job briefings, and the fact finding. The recovery effort has been methodical. The cause of the spill is still under investigation.

HB-Line: On September 25, operators transferred nitric acid (used for dry runs) into the Precipitator Feed Adjust Tank. Shortly thereafter, this solution began to very slowly leak into a Second Stage Precipitator because a normally closed ball valve in the path was left in the fully open position and a closed needle valve leaked. During nearly five weeks, ~5 liters of solution drained from one vessel into the other. The last time the ball valve should have been manipulated was during a DOE Readiness Assessment dry run on August 19 – a signed procedure step indicated that a control room operator requested the process area operator to close this valve. While the tank was leaking, operators noted the increasing/decreasing tank levels while performing electronic rounds, but missed the opportunity to identify the liquid transfer earlier by pulling up trend data, which is how an operator identified it this week. Earlier this week, the distributed control system had a level deviation alarm when the cumulative level drop exceeded 5 liters. An operator acknowledged this alarm, but he did not clear the deviation screen, log the alarm, or ask anybody to investigate. This event is troublesome because HB-Line is preparing to handle concentrated plutonium solutions in the future.