

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 6, 2012

**TO:** T. J. Dwyer, Technical Director  
**FROM:** M. T. Sautman and D. L. Burnfield, Site Representatives  
**SUBJECT:** Savannah River Site Weekly Report for Week Ending July 6, 2012

**Defense Waste Processing Facility (DWPF):** Last week, the slurry mix evaporator (SME) experienced eight pressure spikes, five of which were strong enough to trigger the steam interlock. These pressure spikes caused material to be carried over from the SME to the SME condensate tank (SMECT). While the operations staff responded in accordance with their procedures, they did not investigate what was going on. For example, they did not realize that the resulting change in the SMECT's level increase rate was indicative of carryover. While carryover can also be detected by a pH change in the SMECT, both pH probes and the sample pump were out-of-service. DWPF has a specific administrative control (SAC) that requires the contents of the recycle collection tank (RCT) be characterized to ensure that the calculated time to the lower flammability limit (LFL) upon loss of ventilation be greater than 4 days. While SRR personnel had calculated this based on the anticipated waste stream, they did not revise this calculation to reflect the actual SMECT contents before transferring the contents to the RCT. The transfer procedure requires an engineering evaluation if the SMECT is known or suspected to contain greater than 200 gallons of SME product carryover. The operations staff marked this step not applicable even though they do not have a means to measure or calculate carryover volume. SRR's initial position was that they complied with the SAC because 1) they did the original calculation and 2) a subsequent calculation showed that the actual tank contents had a calculated time to LFL greater than 4 days. DOE and the site rep questioned this position because the carryover transfer invalidated the original calculation. Furthermore, showing that the waste was safe a week after the transfer (it was at tank farms by then) is not the same as ensuring it was safe prior to performing the transfer. The site rep also questioned the rigor of SRR's implementation of this SAC, which performs a safety class function. SRR later declared a SAC non-compliance. SRR also modified their procedures to require engineering to perform an evaluation to verify there was no carryover 1) after the receipt of a high pressure alarm in the SME or sludge receipt and adjustment tank and 2) before transfers from the SMECT to the RCT.

**HB-Line:** The site rep walked down HB-Line in order to see where the main contributors to the material at risk and combustible loading were located. Since a fire involving old HB-Line (3<sup>rd</sup> and 4<sup>th</sup> levels) is one of the most significant accident scenarios, the site rep requested additional details on the assumed combustible loads in the abandoned processing areas, which are not routinely accessed.

**Solid Waste Management Facility (SWMF):** SWMF unloaded an SRNL concrete cask from a culvert on Pad -9E. The cask had been previously wrapped in plastic and stored along with other material in the culvert for several years. SWMF operators slit the plastic wrapping and inspected the concrete cask for physical degradation. They detected no significant damage so they applied an additional layer of plastic wrap and transported the cask to Pad 26-E. They then moved the forklift off of Pad 26-E to an out of the way location. Radiation Control Inspectors then performed a contamination survey of the forklift and found contamination on the tines (~200k dpm/100 cm<sup>2</sup> β/γ.) The container was also inspected and holes were found in the outer layer of plastic. The area was controlled as a contamination area and actions were initiated to ensure that the spread of contamination was minimized.