

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 5, 2010

TO: T. J. Dwyer, Technical Director
FROM: D. L. Burnfield and M. T. Sautman, Site Representatives
SUBJECT: Savannah River Site Weekly Report for Week Ending March 5, 2010

Department of Energy: Jeff Allison is being reassigned as the Director of Special Projects. Jack Craig will be the acting Site Manager until a permanent replacement is found.

Integrated Safety Management System (ISMS): SRR began their external company ISMS Verification review this week. The site rep shadowed the SRR team performing this review and watched the removal of a 40-foot long caisson from a riser of tank 25. SRR sectioned this contaminated caisson (between 70 and 800 mrem/hr on contact) so that it would fit into the 36-foot long container. The site rep also reviewed a work order at the Defense Waste Processing Facility (DWPF) that did not appropriately describe the controls for working on energized equipment. After the site rep questioned the procedure controls, the Shift Operations Manager called a time out and corrective actions were taken.

Modular Caustic Side Solvent Extraction Unit (MCU): SRR samples every third batch of strip effluent that is being transferred from the MCU Strip Effluent Hold Tank (SEHT) to the Strip Effluent Feed Tank (SEFT) at the DWPF. Recent sample results indicate that the three batches of waste that are currently in the transfer line plus the batch currently in the SEHT exceeded the DWPF organic Waste Acceptance Criteria (WAC) by about a factor of five. At this time, engineers believe the spike may be due to two faulty instruments. The actual strip feed flow was 80% higher than indicated, thereby reducing the residence time in the strip effluent decanter. Furthermore, the solvent specific gravity appears to have risen, decreasing the separation effectiveness in the strip contactors. Since the main hazard from high organic is downstream of the SEFT, SRR is planning to dilute the strip effluent to safe concentrations inside the SEFT. (See 2/26/2010 report).

Saltstone: While transferring plastic bags of waste from a truck bed to a metal box inside a Radiological Buffer Area, three workers contaminated their clothing and shoes. Although workers did not notice any breached bags or free liquids, wet spots were visible on the truck bed and nearby asphalt and the liquid had a pH of 11. Radiological Control Inspectors detected contamination (probing up to 500,000 dpm β - γ) on the truck bumper, truck bed, and nearby asphalt. Facility personnel have not conclusively identified the source of contamination, but plan to inspect each bag next week. They have already determined that one of the waste bags was supposed to have been segregated from the rest.

C-Reactor: Recently, SRNS suspended cask welding to reanalyze activity hazards and correct personnel protective equipment after a worker melted his plastic suit for the second time. However, shortly after welding resumed this week, a second worker melted his plastic suit and welding was suspended again. (See 2/19/10 report).

H-Canyon: While executing a procedure to adjust low activity waste, neither the operator, independent verifier, or first line manager realized that the plutonium concentration of the batch exceeded a procedure limit used to protect the WAC. The Tank Farms WAC was not actually violated because the waste was later diluted for other reasons. H-Canyon was already implementing a software change to automate these calculations because the very calculation-intensive procedure was susceptible to errors.

The Site Rep met with DOE and SRNS management to discuss Board concerns with the proposed methodology for incorporating instrument uncertainties in Limiting Conditions for Operation.