

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 10, 2013

**TO:** S. A. Stokes, Acting Technical Director  
**FROM:** D. L. Burnfield, Site Representative  
**SUBJECT:** Savannah River Site Weekly Report for Week Ending May 10, 2013

Sanjoy Sircar was on site to assist with site rep duties.

**HB-Line:** Facility personnel continue to prepare for the upcoming Alternate Feed Stock Part 2 (AFS2) plutonium processing mission. This week, SRNS continued troubleshooting and testing the colorimeters, which had been showing unexplained fluctuations. The colorimeters are used to measure the concentration of plutonium solutions; they are categorized as a General Service-C criticality safety control and used to prevent inadvertent transfers of concentrated solutions to H-Canyon. The operation of one of the colorimeters continues to be problematic because of molarity and valence state changes.

The contractor identified that the approved, but yet to be implemented, safety basis does not include a bounding analysis of the seismic accident scenario. The analyzed accident progression includes post-seismic fires and explosions that affect multiple process vessels, but it did not account for releases from certain transfer pipes, which are not currently seismically qualified. In the safety basis calculation, the projected mitigated radiological dose to the collocated worker is ~98 rem TED. The additional source term from a release from this piping could increase the projected dose to greater than 100 rem TED and force additional safety significant controls. The contractor plans to perform walk-downs of the piping over the next week and will evaluate whether that piping can be seismically qualified, thus avoiding an increase in the calculated dose consequences.

A DOE facility representative identified a potential concern with the minimum staffing requirements in the HB-Line control rooms. During a nuclear incident drill, or during testing of the nuclear incident monitor (NIM), the safety basis allows the control rooms to be completely abandoned. The operators move either to the H-Canyon control room or to their drill area rally point. Only radiation protection and security personnel remain in the facility. Unlike other facilities, no qualified operations personnel are assigned to monitor the condition of the facility during the drill. While operations personnel take steps to suspend processing and enter various limiting conditions of operations (LCOs) before initiating the drill, there is a concern about the ability of facility staff to respond to a real incident that occurs during the drill. DOE has transmitted this concern to the contractor, who will evaluate the matter.

**Waste Solidification Building (WSB):** The proposed FY 2014 Fissile Material Disposition Program budget is a significant reduction from what NNSA had previously expected. NNSA is beginning to assess alternative disposition strategies. In line with the reassessment, NNSA has directed SRNS to complete construction of the facility but to defer activities such as start-up and commissioning readiness reviews until the assessment is complete and a decision has been made on how to continue. NNSA has requested, and SRNS has provided a plan detailing how to defer the remaining activities in a way that preserves the current assets.

**Recommendation 2012-1 Savannah River Site Building 235-F Safety:** SRNS provided DOE and the site rep a presentation on advanced detection strategies and devices that are being considered for the characterization of the 235-F hot cells. These strategies range from advanced infrared detection devices to sophisticated data handling technologies. While the site recognized that some of the technology would not be ready in time to assist in the deactivation of the facility hot cells, they were hopeful that some could be available in time to be used to give them assurance that they have met the implementation plan endpoint of reducing projected collocated worker doses to less than 100 rem TED.