

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 29, 2008

**TO:** T. J. Dwyer, Technical Director  
**FROM:** M. P. Duncan and M. T. Sautman, Site Representatives  
**SUBJECT:** Savannah River Site Weekly Report for Week Ending August 29, 2008

**Saltstone:** The Decontaminated Salt Solution (DSS) from the Modular Caustic Side Solvent Extraction Unit contains some organic solvent. The primary constituent is Isopar L, and if enough of it ends up in the feed to Saltstone, tests indicate that much of it could be released from the grout into the headspace of the vault during the curing process and the resultant temperature increase. For much of the summer, Saltstone has been in an outage to install additional equipment necessary to prevent a potential vault headspace explosion. These new controls will likely be needed when Saltstone begins to process feed that is mostly DSS. In the near term, there may be enough other waste from other sources, (e.g., Deliquification, Dissolution, and Adjustment), that blending can keep the concentration of Isopar L low enough such that an explosion would be an incredible scenario. The Site Rep reviewed the calculation of the limiting Isopar L concentration. While benzene was appropriately considered, he questioned why other organic constituents, such as those listed in the Waste Acceptance Criteria, were not assessed. Preliminary calculations validated the concern, and the contractor is working to revise the calculation to include the contribution to flammability from all potential sources. The estimated restart date for Saltstone processing has been delayed to the end of October.

**R Reactor:** The Site Rep observed workers load often rusty drums of depleted uranium oxide into Conex containers, which will be shipped to Nevada. The work observed was well controlled. When workers detect contamination on the top of the drums, they used to overpack them, but now try to wipe them clean because it was happening fairly often. At least three breached drums have been found. In one case, a few cupfuls of oxide leaked out of a 3-4" gash in one drum.

**F-Canyon:** While remediating transuranic waste drums in the Truckwell, work was suspended when a pinhole leak in a bagout sleeve caused suspension guidelines to be exceeded. The Site Rep also observed the second mock-up of the new process for unloading overpacked drums and watched the first actual overpack that was unloaded. The Site Rep passed on some conduct of operations and safety observations that were addressed. Rather than just seek a waiver, management decided to switch to a more powerful blower when the first measured air velocities for the new drum hood did not meet site requirements.

**Facility Representative (FR) Program:** The Site Rep met with management to discuss the training and qualification of current and future FR candidates. In the past, FR candidates went through a training course designed for FRs and could take advantage of plentiful contractor shift technical engineer courses. Today, nearly all the training is self-study or on-the-job. In addition, exams and question banks have become out-of-date because there have been few FR candidates in recent years. Because DOE plans to hire several FRs, managers are looking at options to update and enhance their currently limited training opportunities.

**Tritium Facilities:** A mechanic performed maintenance on the wrong safety-significant Kanne tritium monitor due to an error in the work package. While the cause is different, this is the second time in three months that work was done on a wrong safety-significant system (see 5/30/08 report).

**Defense Waste Processing Facility:** In less than a week, there were three separate incidents where the integrity of workers' plastic suits was compromised. One worker, who was grinding and cutting bolts, inadvertently stepped on hot metal, which melted through his rubber shoe cover and the plastic. This contaminated the bottom of his shoe. Another worker had a 1 inch tear in his chest area that was discovered near the end of a job involving drilling, welding, and climbing. In the last incident, a pinhole leak was discovered when the suit was spray painted (to fix any contamination) and the paint began to bubble. Facility management appropriately stopped all work with plastic suits while alternatives to protect plastic suits were investigated.