

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 27, 2008

TO: T. J. Dwyer, Technical Director
FROM: M. T. Sautman, Site Representative
SUBJECT: Savannah River Site Weekly Report for Week Ending June 27, 2008

F-Canyon: After removing a CO₂ fire extinguisher from a transuranic waste drum, an operator inadvertently knocked the cylinder over - causing it to discharge into the remediation enclosure (similar to a glovebox). This pressure transient released contamination from the enclosure (up to 100,000 dpm/100 cm² alpha). Operators and radiological control personnel responded appropriately to attempt limited decontamination until the radiological work permit suspension limits were being approached. Personnel then exited the area. Following a post-job review and notification of management, personnel reentered the area to perform additional decontamination and to secure the work area using appropriate controls. Also this week, during investigation of a continuous air monitor alarm, operators identified a drum with external contamination (~1800 dpm alpha) and a loose drum lid/closure ring. F-Area personnel have processed over 2400 transuranic waste drums with only approximately 200 drums remaining to complete this campaign. However, these remaining drums include some of the more difficult drums to process. As a part of the corrective actions for the events discussed above, F-Area management plans to brief crews on the need to methodically evaluate new or unusual hazards during remediation of these final drums.

K Area: When a relatively large volume of epoxy grout was mixed and applied in an area with insufficient heat removal, significant fumes were generated. Eight personnel were transferred to Medical as a precaution. In addition, it was discovered that the safety-significant K Area Interim Surveillance exhaust HEPA filter fire screen had been installed at an angle, leaving a ~2" section of the filter unprotected.

H-Canyon: An Exhaust Seismic Vulnerability Alternative Study recommends that a 48-hour stagnant period after a design basis earthquake be eliminated by: 1) backfill around the 299-H duct, 2) install a blank on the old HB-Line duct, 3) reinforce the bottom 20' of stack, and 4) accept the calculation for air flow through rubble bed (i.e., the collapsed stack liner). (See 1/25/08 and 3/28/08 reports).

Interim Salt Disposition Project: Lack of rigor and clarity with sample identification and results led to the wrong analyses (pH and Cs-137 vs. Pu and Sr) being performed on two batch 6 samples by Savannah River National Laboratory (SRNL) and the results inappropriately being used to authorize the transfer of batch 7 strip effluent from the hold tank to the Defense Waste Processing Facility. In addition, unexpectedly high moisture carryover has caused high radiation levels (up to 1 R/hr) in the process vessel ventilation system duct at the Actinide Removal Process.

Tritium Extraction Facility: Further evaluation of the Potential Inadequacy in the Safety Analysis related to indeterminate weld quality resulted in the declaration of an Unreviewed Safety Question.

Emergency Preparedness (EP): The major issues identified by the Annual EP Evaluated Exercise were communication and information flow, contamination control at the incident scene, and equipment functioning and adequacy (e.g., failure of field monitoring team air samplers). In addition, the exercise tested the limits of the fire department – after the initial response, there was a potential 45-60 minute window where there were only 3 firefighters available to conduct any further mitigation. (See 5/30/08 report).

Safety Analyses: Analysis of 2002 - 2006 meteorological data indicates that the calculated doses to the public could drop between 10 – 26% compared to doses calculated using 1997 – 2001 data. This reduction could affect the functional classification of safety class systems.