

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 15, 2006

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: J. S. Contardi/M.T. Sautman, SRS Site Representatives
SUBJECT: SRS Report for Week Ending December 15, 2006

DNFSB Activity: New Board members, Dr. Winokur and Mr. Brown, walked down K-Area Material Storage, H Tank Farms, Saltstone, the Defense Waste Processing Facility, the Tritium Extraction Facility, and other nuclear facilities at the Savannah River Site.

Saltstone: The first 10,000 gallons of Batch 0 liquid waste from Tank 50 was processed on Tuesday. Oscillations in the dry feed rate were observed near the end of the run, but a cause has not been identified. Furthermore, a second day of processing was prevented because one of the admixture pumps would not function due to a material incompatibility issue.

Tritium: Personnel at the Tritium Extraction Facility (TEF) continue with preparations for the extraction of the first set of irradiated rods. This week the rods were transferred into the facility and placed in the target rod preparation module. The Site Reps observed the rod movements as well as radiation shielding verifications performed while the rods were moved within the facility. Rupture discs were blown during two transfers of >1% tritium gas (which will be used for leak checking) at TEF. In one case, the distributed control system showed a manual valve was open when it was actually closed in the field. A third disc ruptured during a deuterium transfer at H Area New Manufacturing.

H Tank Farms: Very high contamination and radiation levels have been encountered during the excavation of the failed Tank 37 transfer line. The Site Rep walked down the work area and reviewed controls with Radiation Control and Operations representatives. After two workers tore their plastic suits this week, a safety stand down was conducted and safety representatives inspected the area for items that could snag the suits. The Site Rep observed radiation control inspector practices that could lead to cross-contamination and discussed these with management.

Salt Waste Processing Facility (SWPF): The Independent Technical Review (ITR) for SWPF identified no fatal flaws, 10 technical issues, 48 areas of concern, and 67 suggested improvements. The identified technical issues include the adequacy of the computed in-structure response spectra, the vertical/horizontal ratio of the Central Processing Area design, properties of undissolved solids in the waste, the ability to seismically qualify dark cell valves, and non-destructive examination of dark cell piping. The team concluded that the technical issues associated with the structural design can be addressed as part of the normal design evolution. However, they believed there was significant project-level risk because the geotechnical investigations were behind schedule for a project at this stage of design. The Federal Project Director had the Federal Design Authority review the ITR report and they are working out the path forward with the contractor.

Solid Waste Management Facility: The contractor declared a potential inadequacy in the safety analysis for a fire on the transuranic waste pads. Recent test data indicates that a fire is not energetic enough to result in plume lofting which was assumed to occur in the safety analysis.