

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 15, 2004

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
J. J. McConnell, Deputy Technical Director
FROM: J. S. Contardi, SRS Site Representative
SUBJECT: SRS Report for Week Ending October 15, 2004

Saltstone Processing: Initial low curie salt disposal plans had relied on processing of less than 0.1 Ci/gal (cesium-137) dissolved salt in the Saltstone Production Facility followed by processing of more concentrated streams (e.g., up to 0.4 Ci/gal) through a new saltstone process. Necessary modifications to the Saltstone Production Facility (SPF) have been completed to process waste streams containing up to 0.1 Ci/gallon. However, tank waste samples indicate that the saltcake contains more cesium than predicted. This would likely result in a low-curie salt feed which may not be practical in the recently modified SPF. As a result, WSRC has proposed alternative processing methodologies that could safely process higher-activity waste streams. The two primary alternatives are: 1) placing the mixer on the roof of the vault, thereby eliminating the need for a grout pump; and 2) constructing a mixer and grout pump enclosure that can be remotely operated and removed if necessary. WSRC has determined that at 0.2 Ci/gal enough waste could be processed to meet future tank space requirements. A definitive path forward will need to be selected and implemented quickly to meet processing expectations. The first batch of salt solution is scheduled to be processed in October 2005.

FB-Line: De-inventory of FB-Line is now ahead of schedule and is expected to meet the program target date of March 2005, the contract baseline target is September 2005. Thus far, 192 oxide stabilization runs have been completed and 61 per cent of the items have been shipped from the facility. Legacy plutonium residue disposition was completed late last year in HB-Line phase I. De-inventory and processing activities (e.g., furnace operations) will generate a limit quantity of residues that may require future dissolution in HB-Line.

Sealed Source Disposition: Legacy plutonium-238 sealed source disposition activities are ongoing in HB-Line. These disposition activities require the sources to be opened and the radioactive material divided into "cuts" that meet the waste acceptance criteria for disposal. During a recent evolution, a cut of waste was surveyed prior to exiting the glovebox and determined to be above the radiological work permit suspension guideline. The operators stopped work and notified the first line manager, operations manager, and a radiological technician. The waste cut was subsequently divided further and successfully bagged out. The next waste cut prepared was also above the radiological work permit suspension guideline and work was stopped. Radiation surveys of the waste cut were determined to be 308 mrem/hr @ 30cm and 1500 mrem/hr @ 5cm. Further dosimetry was assigned (e.g., electronic personnel dosimeters and extremity dosimeters) and work was completed under a different task on the radiological work permit. Contamination, 10,000 dpm/100 cm² (alpha), was also found on the kraft paper in the processing room. The paper was rolled up and no measurable airborne radioactivity was detected from air samples collected within the processing room. The higher than expected radiation levels and contamination found outside the glovebox may indicate a need for more deliberate work planning especially for high-activity materials such as plutonium-238.