

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 26, 2005

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: J. S. Contardi/M.T. Sautman, SRS Site Representatives
SUBJECT: SRS Report for Week Ending August 26, 2005

Transuranic Waste Processing: The site contractor has processed all but 28 unvented drums currently stored on the waste pads. However, the remaining 28 drums have various hold tags that currently prevent processing through vent and purge. The total plutonium equivalent curies of the drums exceeds the administrative limit that would allow culvert mining of unvented drums. The contractor is currently developing a path forward to process the remaining drums in order to allow additional mining of unvented drums.

Hydrogen: The high-level waste tanks are equipped with cooling coils, which can reach lengths of 1000 feet. When these coils fail, they are permanently isolated. Because they still contain water, which is exposed to very high radiation fields, there is the potential for radiolytically generated hydrogen gas to accumulate in this closed system over the years. The Site Rep met with tank farms personnel because rough staff estimates of the hydrogen generation rates and gas volumes were not negligible. Following a previous staff meeting in May, the contractor determined the total isolated volume in each tank (up to 685 ft³) and the volume of hydrogen gas that could have been generated (using very conservative assumptions) since the coils were isolated. As expected, the volumes are not large enough to make the tank headspace flammable in the event of a coil breach and the potential energy of the hydrogen gas would not result in significant doses to the public. That being said, the staff felt that the potential to have flammable gas mixtures within the coils or in a localized area immediately following a coil breach should be acknowledged in activity hazards analyses. Activities such as tank closure or the handling of large equipment inside a tank would have an increased chance of providing a spark or accidentally breaching a coil. The contractor is pursuing this facility worker hazard issue with their work planners and engineers.

Tank 5: A review of lesson plans and study guides for tank 5 bulk waste removal operators found a good discussion of the hazards of operating at waste levels above known leak sites and detailed operator actions required in the anticipated event that waste leaks into the annulus. (See July 22 and August 12 weekly reports). If a leak does occur, the plan is to continue slurring or transferring waste since removal of the remaining sludge is considered the safer condition.

Tritium: The Site Reps and staff member Ms. Raabe walked down K-Area and the Tritium Extraction Facility (TEF). The first cask of tritium producing burnable absorber rods arrived at K-Area this week and will remain there until TEF begins hot operations next year.

Low-Curie Salt Processing: Last week, the Nuclear Regulatory Commission (NRC) and the Department of Energy (DOE) held a public meeting to discuss near term salt processing at SRS. During the meeting, the NRC requested clarification on several issues. Responses to the NRC requests will likely cause further delays. The delays are expected to be approximately 30 days which would move start of salt disposition activities to the end of March 2006. In order to meet current accelerated clean up goals, disposition activities must begin by October 2005.