

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 14, 2003

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
J. J. McConnell, Deputy Technical Director
FROM: R. T. Davis/ T. D. Burns
SUBJECT: SRS Report for Week Ending November 14, 2003

External Interactions: On Thursday, Dr. Burns attended a meeting between DOE-SR, the South Carolina Department of Health and Environmental Control, and the South Carolina Governor's Nuclear Advisory Council. The purpose of the meeting was for DOE-SR to outline the options available for treating and dispositioning salt wastes, discuss the reasons that led DOE to choose the options it currently plans to pursue, and explore potential strategies that would allow DOE to meet its acceleration goals in a manner that addresses state regulatory priorities.

Tank 3 Cooling Coil Leak: Despite the current regulatory uncertainty associated with on-site disposition of low-curie salt wastes, activities continue to prepare potential feed material, some of which may require actinide removal, for solidification and disposition via the Saltstone Production Facility. Most recently, the salt waste in Tank 3 was identified as candidate feedstock for the newly installed actinide removal process in Building 512-S. Draining of the interstitial salt solutions in Tank 3 was commenced to remove the majority of the cesium activity prior to future dissolution and transfer of the salt-cake to Building 512-S for actinide removal.

An engineering evaluation was performed last week to determine if the salt-well pumping technique employed to drain the interstitial salt solutions could result in settling of the salt-cake and subsequent damage to tank cooling coils. The evaluation concluded that salt-cake settlement would not place an unacceptable loading on the cooling coils.

On Monday, a cooling water leak of less than 500 gallons was identified in Tank 3 while operating the salt-well pump to drain interstitial fluid. Draining activities were terminated and camera inspections were initiated. The camera inspections revealed that salt settling in the tank had occurred. Subsequent testing of individual cooling coils indicated that 23 of the 27 cooling coils had developed leaks. WSRC continues to investigate this event to understand exactly what caused the coil failures and, if it was due to salt-settling, why their engineering evaluation incorrectly concluded that the potential loadings would be acceptable.