

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 20, 2002

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 September 20, 2002

DNFSB Staff Activities: Staff members J. Contardi, C. Shuffler, and Deputy Technical Director J. McConnell were on-site this week to review the status of salt processing and americium/curium disposition activities. Site representative R.T. Davis was in Charleston, SC attending the American Nuclear Society's 5th Topical Meeting on Spent Nuclear Fuel and Fissile Material.

DWPF Vessel Leak: On Wednesday, the Slurry Mix Evaporator (SME) vessel developed a leak during an air sparging evolution. The air sparging was being performed to suspend sludge and frit material which had settled in the bottom of the vessel and was interfering with the installation of a new set of cooling coils.

The volume of the SME vessel is 10,800 gallons. When the leak began, the SME contained approximately 9,000 gallons of waste. A significant, though highly variable, leak rate was sustained for nearly eight hours. WSRC estimates that the average leak rate during this period was 6 gallons per minute. The leak rate dropped sharply after the first eight hours to approximately 4 gallons per hour. More than 3,300 gallons of waste has leaked from the SME vessel and is being jetted from the cell sump to Tank 22. Camera inspections have verified the integrity of all jumper connections and indicate that the leak is the result of a vessel breach.

As of Friday, the cause of the vessel breach is uncertain. Preliminary assessments have identified tank wall erosion due to agitation of the coarse frit/sludge material and fatigue of the tank bottom due to mechanical cycling of the agitator as possible causes. The potential impact of the air sparging is also being investigated. WSRC continues to remove waste from the cell and, per the TSRs for DWPF, is preparing a path forward for de-inventorying the SME.

Salt Processing: On Tuesday, DOE awarded two Engineering, Procurement and Construction (EPC) contracts, each worth ~\$10M, for conceptual design of a Salt Waste Processing Facility to be built at SRS. The successful bidders were Foster Wheeler USA Corporation and Parsons Infrastructure and Technology Group. In its Recommendation 2001-1 Implementation Plan, DOE committed to have EPC contracts in place by June of this year. By awarding the contracts this week, DOE has satisfied this overdue deliverable. Conceptual designs are expected to be complete within the next 12-15 months.

Glass Waste Storage Building Project: Final approval of the CD-0 (mission need) package for the second Glass Waste Storage Building (GWSB-2) was recently received from the Undersecretary for Energy, Science, and Environment, Mr. Robert Card. The GWSB-2 is needed to ensure adequate storage space is available for canisters produced by DWPF. Should site initiatives to accelerate sludge processing prove successful, timely completion of the GWSB-2, or an alternative storage option, will be required to avoid an otherwise un-necessary break in DWPF operations.