

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 14, 1998

MEMORANDUM FOR: G. W. Cunningham, Technical Director
FROM: J. Kent Fortenberry / Joe Sanders
SUBJECT: SRS Report for Week Ending August 14, 1998

Surplus Plutonium Disposition (SPD) Draft EIS Public Meeting: The SPD EIS Public Meeting for SRS occurred on August 13th in North Augusta, SC. Both sessions were very heavily attended (approximately 1000 total) with strong support for locating all the affected missions at SRS. The draft EIS identifies as the preferred alternative locating the 'Plutonium Conversion and Immobilization Facility' and the 'MOX Fuel Fabrication Facility' at SRS. SRS and Pantex are equally preferred locations for the 'Pit Disassembly and Conversion Facility.' The SPD EIS Record of Decision is expected in early 1999.

Replacement High-Level Waste Evaporator (RHLWE) Readiness Determination: DOE-SR has directed WSRC to conduct an Operational Readiness Review for the startup of the RHLWE. This direction is in lieu of WSRC's recommendation to conduct a Readiness Assessment. The RHLWE is constructed and undergoing startup testing, with an expected startup date of June 1999.

Higher Than expected Flammability Readings in Tank 49: On 8/4/98, higher than expected benzene concentrations (6% of CLFL) were observed in the Tank 49 vapor space during a planned ventilation outage. As a result, the ventilation was restarted to reduce the benzene concentration in the vapor space. Tank 49 contains 113 kgal of "wash water" (with a relatively small amount of soluble TPB) from the 1983 demonstration test of the ITP process. Preliminary sample results indicate that the hydroxide ion concentration [OH⁻] dropped below desirable levels (pH < 12) allowing the TPB decomposition reaction to occur at a faster rate. WSRC is evaluating whether Tank 49's vapor space could become flammable if tank ventilation is lost for 9 days given a pH of 10, the lower limit for tank corrosion control. WSRC is also evaluating whether to increase the sampling frequency and add caustic in order to increase pH.

Additional Preparations for Re-wetting Tank 8 Dry Sludge: As noted in the weekly report from 7/17/98, WSRC is preparing to add inhibited water solution to Tank 8 to re-wet 130 kgal of sludge that was allowed to dry out over concerns that the tank may develop a leak. The following will now occur:

- The site is now applying a more rigorous ISMS methodology to this activity. Specifically, WSRC has developed a safety matrix which identifies the (1) hazards of this activity, (2) measures to prevent, detect, and mitigate each hazard, and (3) controls to ensure these measures are functional and maintained.
- The amount of inhibited solution added will be limited to 42 kgal so that the 5 foot high annulus pan could not overflow in the event of a leak from the tank.
- The heights of both the sludge and the suction on the tank transfer jet have been positively verified through video inspection while using a reel tape. The jet is approximately 30 inches above the sludge rendering it useless for waste removal during this activity. Instead, in the event of a leak, WSRC is now planning to use an air-operated pump to transfer waste from the Tank 8 annulus above-ground to an adjacent tank. This type of system has been used before but not for high source-term waste.
- WSRC will have an independent validation team review procedural and equipment readiness prior to the addition.
- The gang valves on an adjacent tank that would supply steam to operate the tank and annulus transfer jets in the event of a leak could not be opened. Furthermore, there was not enough qualified portable hose to provide these connections. Both of these items will be resolved prior to the re-wetting activity.