

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 7, 2005

**MEMORANDUM FOR:** J. Kent Fortenberry, Technical Director  
**FROM:** J. S. Contardi/M.T. Sautman, SRS Site Representatives  
**SUBJECT:** SRS Report for Week Ending October 7, 2005

**Recommendation 94-1:** Last week the site contractor reached a significant milestone by dissolving pre-existing plutonium residues. The majority of the work was performed in HB-Line with support as needed from the Savannah River National Laboratory, F/H Laboratory, and H-Canyon. Disposition of non 94-1 plutonium materials is on going in HB-Line. At SRS, only one 94-1 commitment has yet to be completed, which entails the stabilization of existing neptunium nitrate solutions.

**Tank 5 Waste Removal Readiness Assessment:** The Department of Energy Site Office Manager expressed his disappointment that the contractor's initial performance of this Readiness Assessment (RA) was below site expectations (9/23/05 Site Rep report). This week, the contractor spent two full days performing demonstrations of the submersible mixer pump (SMP) flush and annulus to primary tank transfer procedures. In contrast to the previous dry run, simulations were kept to a minimum. Operators wore full personal protective equipment and operated the equipment to the extent it was safe (e.g., SMP turntable ran in oscillation mode, portion of steam line pressurized). Based on equipment-related delays encountered, the contractor would have been hard pressed to make the annulus jet operational within the expected 12 hours. For example, the model of the emergency portable ventilation system that was dedicated to tank 5's use was not approved by Engineering for this function. Twelve different airborne radiation monitors were also tried out, but all of them failed within minutes. The Site Reps will be meeting with facility managers and RA team leaders for two upcoming contractor RAs to discuss their plans, how they are addressing RA lessons learned, and Board expectations.

**Tank 12:** Water was added to tank 12 last January to soften the sludge in preparation for waste removal next year. Tank 12 is an older style Type I tank which had 3 known leak sites above the sludge level. The tank entered service in 1956 and lacks a compliant secondary containment barrier, but does have a five-foot annular pan. Although an inspection after the water addition did not find any leaks, a recent camera inspection detected a new leak site near the current waste level. The leak is similar to the three leak sites previously identified (i.e., a dry salt nodule) and no liquid accumulation has been observed in the annular pan.

**H-Canyon:** This week the contractor reported a leak in one of the decanters within the canyon. The decanter is a safety significant design feature which limits solvent carryover to an evaporator to less than 10 percent. If significant quantities of solvent were fed to an evaporator, a red oil explosion could occur. To prevent this scenario, the contractor shutdown all decanter operations including the associated evaporators. Since the leak was previously known but unaccounted for in the authorization basis, the contractor has initiated an unreviewed safety question to evaluate the potential impacts from a decanter failure. While the affected evaporator was operating, routine sampling of the effluent indicated negligible solvent concentrations.