

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 9, 2001

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers / R. T. Davis
SUBJECT: SRS Report for Week Ending February 9, 2001

HLW Tank 6: WSRC continues to investigate the liquid found in the Tank 6 annulus in mid-January (site rep weekly 1/19/01). This week, WSRC deployed a robotic crawler that provides greater video inspection coverage of the primary tank wall in the tank annulus. Initial inspections near the West riser have revealed five leak sites. Three are near the upper horizontal weld, about 10 inches below the waste level. One is at about 80 inches below the waste level. The 5th site is at the middle horizontal weld, about 115 inches below the waste level. The waste level currently is at 244 inches (660,000 gallons).

Although several sites appear moist, none appear to be actively releasing significant amounts of liquid to the annulus. These leak sites appear to be similar to cracks previously identified in Type I and II tanks. WSRC continues to inspect the Tank 6 primary wall and expects to be complete within 2 weeks. If necessary, WSRC is prepared to perform an annulus to primary transfer. Readiness activities to perform a Tank 6 to Tank 8 transfer are on-going. A decision on how much, if any, waste to remove from Tank 6 is not expected until after the tank inspection is complete. Also, SRS will likely revisit the strategy of using this set of Type I tanks for storage of DWPF recycle waste (Tank 5 would be next). The impacts on DWPF operations are to be determined.

Recommendation 94-1: On January 31st, WSRC submitted to DOE the conceptual design for the 235-F plutonium stabilization and packaging (P&S) project - about 3 months ahead of schedule. Next week, DOE-SR intends to brief EM-1 and shortly thereafter obtain approval to begin preliminary design (CD-1). The conceptual design appears bounding in scope (site rep weekly 1/5/01). The WSRC estimated costs are higher and the schedule is longer than those from the preconceptual design that formed the basis for last year's DOE Implementation Plan (Rev 3, 6/00).

Estimate	Preconceptual Design	Conceptual Design
Cost range	\$100M - \$250M	\$160M - \$260M
Startup	Jan 05 - Jan 07	Jan 06 - Oct 07
Completion	Jun 06 - Jun 08	Jun 07 - Mar 09

DOE-SR will likely propose proceeding based on the original estimates (completion range: June 06 - June 08), since they believe that scope will decrease during preliminary design. The DOE schedule is to complete preliminary design by January 2002 and baseline the cost and schedule by June 2002.

Outer 3013 Can Welder: Current SRTC efforts to develop an outer can welder are critical to success for both Hanford and SRS plutonium stabilization and packaging. BNFL and LANL reviews of the welding process (TIG) have identified issues such as: reported negative experience with TIG autogenous welds at this thickness (3 mm) or greater, potential distortion at high heat input, potential contamination from the copper heat sink, and concerns with metal chemistry, repeatability, and weld penetration depth. BNFL and LANL favor laser weld processes rather than TIG. SRTC is now engaged in an extensive weld qualification program, including a 100-can test run and is planning an independent review the week of March 12th. These issues need to be thoroughly addressed quickly.