

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 8, 2001

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers / R. T. Davis
SUBJECT: SRS Report for Week Ending June 8, 2001

Staff members Merritt, Tontodonato, Ogg, and R. West (OE) were on site this week reviewing plutonium disposition and 94-1 activities.

Recommendation 94-1/2000-1: In December 2000, WSRC identified an alternative to the 235-F plutonium stabilization and packaging (P&S) project, using FB-Line, that has the potential for reducing costs and expediting plutonium stabilization by years (site rep weekly 12/29/00). Last week, WSRC transmitted to DOE pre-conceptual cost and schedule estimates for the FB-Line option. WSRC now believes that the plutonium can be stabilized and packaged sometime between mid-2006 and mid-2007 at a cost of between \$13M and \$29M, depending on the extent of FB-Line infrastructure upgrades. WSRC has discontinued the ramp-up of the 235-F P&S project to focus on this option (site rep weekly 4/20/01). This week DOE approved the mission need (CD-0) and encouraged WSRC to take every opportunity to reduce cost and improve schedule.

The site reps believe that the proposed schedule is not aggressive and that progress on this alternative has languished for the last 5 months, primarily because of uncertainties in available funding and lack of a DOE decision on the funding strategy. Hopefully, this week marks the turning point. While the work scope is somewhat better defined now, it is basically the same as it was understood to be in January 2001. Most of the improvements appear to be second order effects and the addition of cost and schedule contingency. The site reps believe that it should be possible to bring the plutonium metal (a large fraction of the material) into compliance within about two years by installing the outer can welder and the required infrastructure upgrades. This effort appears comparable in scale to recent FB-Line vault modifications. It also may be possible to pursue furnace modifications in parallel with installing the welder, which would improve the oxide stabilization and packaging schedule. This continues to warrant close DOE management attention.

2H Evaporator: This week, WSRC completed the first batch cleaning of the 2H evaporator. Video inspections of the pot indicate that the cleaning was very effective, removing as much as 95% of the scale. It appears that only limited additional batch cleanings will be required to successfully finish this cleaning activity. Subsequent WSRC activities will focus on restarting operations to concentrate DWPF recycle waste. WSRC expects to complete readiness activities and begin the contractor operational readiness review in early August 2001.

The potential for a scale build-up during operations impacts safety controls to prevent a deflagration accident. The previous control required waste removal within 10 days after an evaporator shutdown, which may not be possible because of the scale. The strategy proposed by WSRC uses the ITP (Tank 48 and 49) safety class nitrogen system and a safety significant bottled air system to ensure adequate purge. Both of these controls require operator actions to implement based on periodic surveillance of the normal purge supply system. The staff is currently reviewing this strategy.