

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 12, 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 April 12, 2002

**Emergency Response Drill:** Last week, the site conducted a practice drill in preparation for the annual emergency response exercise that is scheduled for later in April. The drill simulated a seismic event that resulted in an airborne radiological release from the tank farms due to damaged equipment during an interarea transfer. The drill also simulated damage to the ventilation system associated with Tank 26 leading to a deflagration and an injured/contaminated worker. Site performance during the drill was considered unsatisfactory, particularly in the field. Problems areas identified included accountability, classification, public information, mitigation, radiological monitoring and first aid. Lessons learned training occurred this week and will continue next week.

The annual exercise scheduled for the week of April 22 will include implementation of the Federal Radiological Emergency Response Plan, which includes response from several federal agencies. Notably, the exercise will include deployment of the Federal Radiological Monitoring and Assessment Center (FRMAC) from the Nevada Operations Office to assess contamination of the ingestion pathway zone. The exercise is expected to last 3 days.

**PUREX Waste Treatment:** In 2000, DOE decided to suspend PUREX waste treatment at the Consolidated Incineration Facility (CIF) because of funding issues (site rep weekly 4/14/2000). Over the last two years, the site has been investigating more cost effective treatment options. The Site Treatment Plan requires treatment of 50% of the legacy PUREX waste by FY '09. Approximately 37,000 gallons of the legacy waste remains and an additional 100,000 gallons will eventually be added as the canyons are shut down. This waste contains tributyl phosphate, n-paraffin and decomposition products in an aqueous and organic phase. In addition, the waste is contaminated with radionuclides (notably, over 1e4 dpm/mL of Pu-238) and RCRA hazardous materials.

In March, WSRC completed a final report on alternative treatment options for this waste and recommended that DOE pursue direct stabilization of the organic portion of the waste and transfer of the aqueous portion to saltstone (via Tank 50) for processing. DOE-SR has accepted this recommendation. The option for the aqueous portion appears to have little risk and will begin in FY'03 if timing aligns with processing of low curie salt in Tank 50. Direct stabilization of the organic portion of the PUREX waste involves the use of either a polymer sorbent or an inorganic clay and will require a new processing facility. WSRC estimates that a new facility could be constructed near the CIF at a cost of about \$7.5 M. This option does require additional research and development to fully develop the formulation and ensure it meets the appropriate waste acceptance criteria. Because of technical risk, WSRC recommends not pursuing RCRA closure of CIF until 10% of the organic waste is processed.