

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 8, 1999

**MEMORANDUM FOR:** G. W. Cunningham, Technical Director  
J. Kent Fortenberry, Deputy Technical Director  
**FROM:** C. H. Keilers / R. T. Davis  
**SUBJECT:** SRS Report for Week Ending October 8, 1999

**Replacement High Level Waste Evaporator:** The Contractor Operational Readiness Review (ORR) is scheduled to begin Monday (10/11/99). The DOE ORR is scheduled to start in early November (11/8). This schedule supports startup by mid-December. This week, the DNFSB staff and site representatives continued to pursue questions involving the reliance on non-Safety Class equipment to confirm that plant conditions are within the bounds assumed in the safety analysis and thereby prevent or mitigate design basis accidents. To resolve this issue, the site has proposed improvements to the technical safety requirements and administrative controls that will increase the surveillance frequency on this equipment, increasing confidence in its reliability. (3.a)

**Follow-up on FB Line Contamination:** On Wednesday, WSRC sectioned the defective bagless transfer container and sent the pieces to SRTC for failure analysis (site rep report, 10/1/99). Upon opening the can, WSRC discovered that 53 percent of the metal button was oxidized. Preliminary estimates indicate that this would be consistent with a can breach at least 35 weeks ago (the button was packaged in July 1998). SRTC is beginning non-destructive evaluation. This will include radiography, computed tomography (3D imaging), and laser mapping of the defect. (3.a)

**Recommendation 94-1:** On Tuesday, DOE-SR concurred with WSRC combining the pre-conceptual design efforts for plutonium stabilization, packaging, and storage in Building 235-F, as well as pursuing triple-stacking containers in Building 105-K (site rep report 9/10/99). The alternative of only installing a minimal stabilization and packaging system in 235-F is not being pursued. DOE-SR requested that the pre-conceptual submittal (due 12/31/99) include rough costs, a design schedule, and a matrix comparing 235-F design requirements to those for the Actinide Packaging and Storage Facility (i.e., the new facility project that was suspended earlier this year). This course allows a better comparison of options (e.g., build a new versatile facility or modify an old Pu-238 contaminated one). It also supports the DOE Record of Decision to move Hanford material to SRS. However, the new project's late start and increasing scope have extended the time required to establish a project baseline during this last year. This makes an early funding decision and construction start unlikely, probably leading to further stabilization and packaging delays. (3.a)

**High Level Waste (HLW) Tanks Structural Integrity:** The current tank farm authorization basis does not consider the long-term reduction in concrete strength that occurs at elevated temperatures (e.g., above 150 °F). Concrete basemats and columns in most SRS HLW tanks may have seen such temperatures in the past from high heat sludge. Few tanks now contain such sludge. Last week, WSRC established a Potential Inadequacy in Safety Analysis (PISA) to track this issue, which has been recognized for several years at Hanford. WSRC has informed the site representatives that they are aware of the Hanford experience and have been tracking this as part of the dry sludge PISA (site rep reports 4/23/99, 7/2/99). Also, concrete degradation was considered in 1995 structural studies for the type III tanks, as part of the ITP seismic resolution program. WSRC is reviewing tank histories and analyses and should have this issue better defined by the end of next week. (3.a)