

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 21, 2000

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 January 21, 2000

Evaporator Potential Inadequacy in Safety Analysis (PISA): Resolving the PISA reported last week could take several months, and the resulting slowdown in evaporator operation could impact DWPF, extended sludge processing, and the canyons. Specifically, WSRC has identified solids in the 2H evaporator with a higher ratio of uranium to sodium than assumed in the nuclear criticality safety evaluation. WSRC analysis using actual contents indicates that the evaporator is criticality safe. However, compensatory measures prevent all three evaporators (2H, 3H, and 2F) from operating until more analysis is done. WSRC believes the most likely cause to be higher concentrations of silicates in DWPF recycle waste. Video inspections of the 2F evaporator this week indicate similar problems are not present. WSRC expects to complete a technical basis for operation of the 2F and 3H evaporators with non-DWPF recycle waste next week. However, DWPF recycle waste represents about 60% of the planned evaporation in FY 00, and analyses for that waste will likely take several months. This will require WSRC to implement additional measures to manage tank space and meet mission requirements. (3.a)

Salt Processing Alternatives: This week, DOE agreed to implement the Research and Development (R&D) plans for the small tank TPB and CST ion exchange alternatives. This allows R&D activities to re-mobilize at SRS and Oak Ridge. For small tank TPB, testing will focus on catalytic decomposition using real waste versus simulant. For CST ion exchange, testing will include resin particle size reduction, DWPF sampling issues, and potential for solids formation downstream from the ion exchange columns. Work is also underway to develop an R&D plan and work scope matrix for the caustic-side solvent extraction alternative. (3.a)

DOE-SR and WSRC Reviews: Several key on-site review teams completed their field work this week and are in the process of formulating their conclusions:

- ! The DOE Type B investigation of the FB-Line contamination event is nearly complete (site rep weekly, 11/12/99). The team expects to have its draft report to the Manager by January 31.
- ! The WSRC Facility Evaluation Board has also been reviewing FB-Line operations for the last 2 weeks, including observing casualty response drills. This evaluation is broad in scope but should provide insight into the thoroughness of the facility's radiological corrective actions.
- ! The DOE-SR independent validation team observed integrated operations for K-Area Material Storage (site rep weekly 12/17/99), including the interfaces between operations, security, transportation, and the shipper (Rocky Flats). A site representative observed most of these operations. The opportunity to practice integrated operations with minimal simulation appeared to be highly beneficial. Some operator proficiency issues still exist. (1.c, 3.a)

Public Interaction: The Citizens Advisory Board (CAB) meets next week. This week, the site representatives discussed with a CAB member the status of the following: spent fuel stabilization, K-Area Material Storage (KAMS), criticality controls, Recommendations 94-1 activities, and the new Board Recommendation (2000-1).