DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 15, 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 15, 1999

Replacement High Level Waste Evaporator: Staff member L. Zull and outside expert J. Drain were on site this week observing the contractor Operational Readiness Review (ORR). WSRC will soon discontinue simulant operations and will align systems for radioactive waste. The DOE ORR is scheduled for early November to support radioactive operations starting in mid-December. (3.a)

Tritium Facility Operations: The following are noteworthy:

- Building 233-H (RTF) begins an extended outage next week to upgrade the exhaust plenum and increase airflow, as required by the Tritium Consolidation and Modernization Project.
- By November 1, WSRC intends to implement the consolidated Safety Analysis Report approved in May. Facilities are now conducting drills to assess how well operators recognize conditions for entering new Limiting Conditions for Operations and then take appropriate actions.
- Building 233-H is required to have a Safety Class fire protection system; however, a recent WSRC review found that required seismic bracing is missing. WSRC is correcting this. (2.a)

Tritium Extraction Facility (TEF): In August, DOE approved the start of both detailed design and construction (CD-2b, 3a, 3b). Last week, WSRC began preparing the construction site. In parallel, WSRC is quickly ramping up engineering support for the detailed design. The project is adding about 20 engineers a month and expects to be at about 120 engineers in December. The Project Execution Plan indicates that actual construction will start before final design is completed (January and May 2001, respectively). This is feasible because WSRC has responsibility for design, procurement, and construction management. Facility startup is planned for mid-2006.

Given the current project acceleration, DNFSB staff issues raised during preliminary design and new questions on the seismic design spectrum need to be addressed quickly to avoid project delay and increased cost. Current staff questions focus on identification of safety systems (i.e., functional classification), seismic requirements for the confinement system, and design and procurement criteria for safety systems. The project hopes to technically resolve the key issues during the on-site staff review next week. (1.c, 2.a)

High Level Waste Salt Processing Alternatives: This week, the National Research Council issued an interim letter report on cesium processing alternatives for SRS high level waste. Based on their initial review, the committee believes that DOE should continue to pursue research and development and regulatory issues for all four of the processing alternatives (small tank TPB, CST ion exchange, caustic side solvent extraction, and direct disposal in grout). In addition, the committee was critical of research and development planning to resolve technical uncertainties for the alternatives. The committee will be gathering additional information in late-November and plans to issue their final report in April 2000. WSRC is expected to recommend a path forward to DOE by the end of October. (3.a)