

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 3, 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 September 3, 1999

Board members and staff were on site this week reviewing progress on Recommendation 94-1 commitments and other SRS activities.

Potential Plutonium Intakes: On Wednesday, 7 of 8 people involved in a routine packaging operation in an FB-Line vault received potential plutonium uptakes. The source of contamination is still unknown. Possibilities include legacy contamination in the vault or undiscovered breached containers. Initial conditions were normal, and operators appear to have followed procedures. Immediate actions to respond to the event could have been faster, but subsequent response was adequate. No release to the environment occurred. Vault operations have been secured, and a reentry plan is being prepared. Vault reentry is expected next week. (III.A.1, I.A.4)

Tritium Extraction Mission: Tritium was extracted from the last reactor target bundle on Saturday (8/29/99), concluding 44 years of extraction operations in Building 232-H. Future extractions will depend on the Tritium Extraction Facility (TEF), which is now entering detailed design. This week, the staff held a tele-video conference with the SRS on the TEF design. Current 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. (II.B.1)

Evaporator Startup: The replacement high-level waste evaporator is scheduled to begin operations in December after a DOE Operational Readiness Review beginning in late-October. WSRC is training operators and resolving performance issues with the evaporator demister. The redesigned demister was recently tested and achieved a Decontamination Factor (DF) of approximately 10^7 versus a design specification of 10^8 . WSRC is trying to better characterize the expected waste feed and expects that a DF of 10^7 will be acceptable. WSRC has also evaluated the new demister design to ensure it provides a DF of 1000 during accident conditions, a Safety Class function. (III.A.2)

High Level Waste Activities: The following are noteworthy:

- ! This week, WSRC cleaned and inspected the Tank 11 annulus, which has shown signs of degradation (see site rep weekly 4/16/99). The inspection was not conclusive, but appeared to indicate only general corrosion. Additional inspections will be performed next week.
- ! The interim Safety Analysis Report and Technical Safety Requirements have now been implemented at the F-Tank Farm. They were implemented at H-Tank Farm in April 1999. Later this year, WSRC is expected to establish a plan for developing and implementing fully compliant DOE Order 5480.22 and 5480.23 safety basis documents. (III.A.2)