

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 9, 2004

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 July 9, 2004

Plutonium Storage: In the December 2003 DNFSB report to Congress, the Board proposed that DOE conduct a new study of available storage options at SRS. This week, DOE-SR completed this study and transmitted the report to DOE-HQ. The conclusions in this report include the following:

- SRS can provide safe, secure storage and surveillance for the entire consolidated plutonium inventory at Building 235-F and K-Area Material Storage (KAMS).
- A new storage facility is not justified unless storage is extended by more than 20 years.
- If longer term storage were required, building 105-K (the building where KAMS is located) could be modified to accommodate the entire inventory.
- There is insufficient capacity in H-Canyon and HB-Line to process sufficient material to eliminate the need for Building 235-F.

DOE-SR recommends proceeding with the current storage plan (i.e., using Building 235-F and KAMS). DOE-SR also noted that if the storage mission is extended that consolidation to Building 105-K may be appropriate.

Waste Tank Ventilation: While walking down the ventilation system for Tank 35, the cognizant system engineer identified the presence of a through-wall crack in the ductwork upstream of the airflow meters. The presence of this crack calls into question the ability of the Safety Class ventilation system to provide adequate purge flow through the tank vapor space. In response to this finding, WSRC entered the appropriate Limiting Condition for Operations (LCO) to preclude any further waste addition or removal operations for Tank 35.

Subsequent inspections of all other tanks were performed and Tanks 36 and 37, which have similar ventilation system arrangements to Tank 35, were also found to have through-wall cracks in upstream sections of ductwork. The appropriate LCOs were invoked for these tanks as well. Preliminary indications are that the cracks are the result of vibratory stress fatigue on inadequately supported duct sections. A final report on the actual cause is still pending.

Near term corrective actions consist of installing temporary modification patches over the cracks and implementing additional structural support to the failed duct sections. Long term corrective actions will involve a redesign and installation of new duct.

Tank Farm Activities: Due to ventilation system concerns noted above, WSRC entered an LCO which proscribes any waste additions into Tank 35. While still under this LCO, H-Tank Farms operators improperly made a transfer from the H-Diversion Box-6 sump into Tank 35. This action constituted a violation of the Technical Safety Requirements.

Although the amount and nature of the material transferred (approximately 6 gallons of rainwater) did not represent a significant degradation in the safety posture of the tank, the failure of the operators to be cognizant of the LCO condition and requirements represents a lapse in conduct of operations.