DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 19, 2000

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers / R. T. Davis
SUBJECT: SRS Report for Week Ending May 19, 2000

HLW Inadvertent Transfer: Early Thursday (about 4 AM), an operator in the new 3H evaporator control room inadvertently transferred about 1,600 gallons of radioactive waste to the receipt tank (tank 30). Waste was first introduced into the evaporator last week. It is still in startup testing (expected to be complete next week). Essentially, waste was being agitated by steam. Condensing steam caused an evaporator high level alarm. Using the Digital Control System (DCS), the operator secured steam and intended to start agitating waste using air. However, instead of supplying air to the lance for agitation, he supplied air to the lift for moving waste. The transfer was not recognized for about 9 minutes, when the low level alarm sounded, and was not stopped for at least another 5 minutes, after the interlock shutdown the evaporator (i.e., a slow response). The transfer continued until operators found that air was being supplied to the lift. There was no environmental release.

This occurrence illustrates the need for more formal and deliberate DCS operations. Compared to previous DCS occurrences (site rep weekly 11/5/99), this event resulted more from a single operator error and less from a weakness in the design of the DCS user interface. In this case, DCS controls for lance and lift operations are difficult to confuse (e.g., they are both labeled and are on different monitors). This event does show how quickly and easily a problem can occur using a DCS unless operations are deliberate. WSRC has already updated procedures to help prevent recurrence in the 3H evaporator and is taking steps to improve formality of operations.

Tritium Drill: A site representative observed an emergency drill this week involving concurrent accidents in two tritium facilities: 232-H and 233-H. The Emergency Operations Center (EOC) was activated. While most of the drill went well, WSRC self-identified problems in the initial response, controlling contamination, utilizing resources, restoring monitoring, and quantifying the release. Another tritium exercise is planned for next month.

9975 Shipping Containers: On May 8, DOE (EM-5) rescinded the 9975 shipping certificate because of the marginal lid performance during recent drop tests (site rep weeklies 4/7/00, 4/28/00). WSRC is no longer pursuing a Justification of Continued Use, but instead has redesigned the lid. Redesign took 4 weeks instead of the expected 17 weeks. Four units are on order to support drop tests next month. WSRC expects to have a revised Safety Analysis Report for Packaging in August.

Tank 8 Waste Removal: The first hydrogen depletion pump run began Friday morning in the liquid above the sludge (site rep weekly 4/21/00). Initial reports indicate little hydrogen is being released, consistent with the sludge being only slightly mobilized during the first run.

F-Canyon: On Thursday, F-Canyon reported a criticality control violation involving the solvent recovery system tank (13.7) with alkaline plutonium solution (site rep weekly 3/31/00). Because the boration was below desired levels, the boration procedure has been left open for several weeks. F-Canyon was relying on lock-out of not one but two tanks during this period to maintain isolation of tank 13.7 solution. In the process of restarting 2nd Pu cycle this week, a lockout for transfer to the other tank was not restored. No transfers to tank 13.7 occurred. Controls have been reestablished.