

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 19, 1997

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FROM: M. T. Sautman, R. F. Warther

SUBJ: RFETS Activity Report for Week Ending September 19, 1997

Plutonium Solutions. The first of four high-level solution tanks in B771 was drained this week. This was completed more than two months ahead of the Recommendation 94-1 Implementation Plan milestone. Nearly 120 liters of solution containing approximately 88 g/l of plutonium were drained from tank 933 into plastic bottles. The bottles were sampled, placed into drums, and transported to B371. The solution was then transferred into collection tanks for the CWTS, where they will be blended to a lower concentration. Radiological protection was an important issue since each bottle had a dose rate of approximately 250 mrem/hr on contact. The operation required extensive coordination among two buildings, the fire department, traffic, security, nuclear material handlers, and safeguards personnel. Throughout the operation, there was extensive oversight by SSOC building managers, RFFO (not just facility representatives), and K-H.

The Site Reps provided nearly continuous oversight of the four-day operation. Overall, the operation went smooth although there were several delays due to issues that should have been resolved beforehand. This was disappointing since the prior week was spent doing a thorough review of the valve lineups, procedures, and criticality controls. Two valves that needed to be manipulated were locked out for another job that was already completed. The procedure had to be modified twice to clarify the wording of a criticality control and delete the removal of a lock from a valve that no longer needed to be operated. There were also delays due to confusion over criticality limits for placing a solution bottle on a table and inadequate spacing (needed for criticality safety) along the transfer path. The conduct of operations by the process specialists doing the draining and transfers was good. The only weakness was that the independent verifications of some valve lineups were a little rushed although no mistakes were made. Once draining began, the only anomaly was that high-level solution began to drip slowly from a valve onto the glovebox floor. This solution was vacuumed into bottles after draining was completed the next day.

Recommendation 95-2. The B371 Authorization Agreement was signed. In addition, nearly all the Benelex shielding has been removed from 3 glovebox lines in B771. The Basis for Operations identified the combustible Benelex as a major fire hazard. The Board had also strongly encouraged removing the Benelex during a prior visit. The remaining Benelex is to be removed next fiscal year.

Infinity Room Decontamination. While performing hot washing of an infinity room in B371, there was an air flow reversal that lasted for a couple of minutes. This caused the infinity room's door to open and allow a cloud of water vapor to swirl into the adjoining contamination containment tent. The tent and two nearby rooms were contaminated. The cause of the reversal was a malfunction of the differential pressure control system for the infinity room. Worker response to the reversal was reportedly very good.

cc: Board Members