

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 1, 2000

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director

FROM: C. H. Keilers / R. T. Davis

SUBJECT: SRS Report for Week Ending September 1, 2000

FB-Line: Today marks the one year anniversary of the vault contamination event, caused by a faulty bagless transfer can (BTC). This led to plutonium uptakes by several workers. The event has been thoroughly investigated (i.e., the DOE Type B report, February 2000). The vault has been decontaminated, reportedly to lower levels than existed before the accident. It is still controlled as an airborne radioactivity area. FB-Line operators now train on casualty response, including mockup training. Certified welding inspectors have inspected several hundred BTCs and found no similar defects. WSRC has implemented improved welding and inspection criteria. In June, DOE conducted a readiness assessment on the BTC welder, and operations restarted. Currently, WSRC is modifying the vault ventilation to install Safety Class fire dampers, remove legacy contamination, and improve air flow. Corrective actions continue.

HB-Line: This week, the DOE Readiness Assessment (RA) team completed their review of HB-Line Phase I activities to support processing mixed scrap (site rep weekly 8/25/00). The RA team identified the following pre-start findings: implementation of a safety control to prevent hydrogen build-up in a dissolver; identification of fan-house air monitoring locations; incorrect dissolver o-ring material; and adequacy of the pre-operational checklist. WSRC satisfactorily closed these pre-start findings, and the Authorization Agreement was signed by the DOE-SR manager on Thursday. First dissolution of mixed scrap is expected this weekend. The resulting plutonium solutions will be stored in H-Canyon and converted to an oxide when the HB-Line Phase II facility begins operations, scheduled for December 2001.

H-Canyon: By procedure, H-Canyon adds neutron poison (boron) to the receipt tank before receiving solution from HB-Line Phase I. This is a nuclear safety control. This week, H-Canyon personnel discovered several problems with this procedure after it was completed but before introduction of fissile material. First, the procedure requires a calculation but gives an incorrect, non-conservative formula. Second, transcription errors were made by the operator when performing this procedure early this week, affecting the calculation. Third, it was unclear what verifications the supervisor is required to make before signing for this calculation. This is an infrequently used procedure, but given these issues, it appears that operators did not understand these steps when executing them. DOE-SR and WSRC are pursuing the lessons learned.

National Research Council (NRC) Committee Meeting: The NRC committee on *Long Term Research Needs for High-Level Waste at Department of Energy Sites* met in Augusta on Monday and toured SRS on Tuesday. SRS personnel reviewed current and planned site HLW missions and identified potential technology needs - including: salt processing technologies (subject of a separate NRC committee), tank fracture mechanics, HLW chemistry, vitrification throughput, and other HLW processing improvements. The committee visited the Hanford site in June 2000 and plans to complete their final report in the Spring of 2001.