

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 11, 2002

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: R. T. Davis/ T. D. Burns
SUBJECT: SRS Report for Week Ending January 11, 2002

Evaporator Performance: As of Friday, all three evaporators are operational. During the past month, the 3H, 2H, and 2F evaporators have achieved 86%, 70%, and 27% attainments respectively. Over 1 million gallons of overheads were produced during this period.

HLW System: Staff members Zull and Massie were on site Tuesday through Thursday to review HLW activities and maintenance programs. With regard to the safety basis revision effort currently underway, the staff emphasized the need for management guidance in the development of reasonably conservative inputs and assumptions. Feedback on the sites' strategy for handling the recent emergence of flammable vapors in underground process support vessels (e.g., purging and monitoring) was positive. However, the staff observed that continued work to identify the vapor source is prudent. The HLW maintenance program was found to be mature and robust, with a focus on ensuring reliability by trending and predicting component lifetimes.

DWPF: Staff members Ogg, Malen, and Dwyer were on-site Thursday to review site preparations for replacement of the DWPF melter. The staff found the preparatory work to be adequate. The melter is currently operating beyond its expected design life and will be operated to failure.

HEU Blend Down: Staff members Hunt, Feldman, Malen and Roarty were on site this week reviewing the HEU Blend Down project. Design and construction activities continue with a baseline schedule to begin shipping LEU solution in June 2003. Although this is later than the Recommendation 94-1 Implementation Plan milestone of March 2003, WSRC is working towards the early start date, which is consistent with the milestone. Delays in HEU processing would also impact H-Canyon spent fuel processing because of HEU storage space limitations.

WSRC is nearing the completion of definitive design (scheduled to be complete next week). Construction activities at C-Lab and H-Canyon continue. In November 2001, the Nuclear Regulatory Commission issued the Certificate of Compliance for the LEU shipping container. Authorization Basis documents are under development and should be submitted to DOE by the end of January.

The most significant open issue remaining is verification that the LEU product will meet TVA purity specifications. WSRC plans to process HEU solutions through the 2nd Uranium cycle twice to purify the solution. However, samples indicate that iron and sulfur content in the solution are ten times historical values and exceed purity specifications. WSRC testing indicates that the most likely source is entrainment of ferrous sulfamate in the mixer-settler. Plant testing and investigation continues to resolve this issue.