DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 24, 2001

TO: K. Fortenberry, Technical Director
FROM: D. Grover and M. Sautman, Hanford Site Representatives
SUBJ: Activity Report for the Week Ending August 24, 2001

Spent Nuclear Fuel Project (SNFP): Mr. Grover attended the 1/4-scale drop test of the Shielded Transfer Cask (STC) at Ideal Machine & Manufacturing, Inc. in Tacoma, Washington. The STC provides confinement and shielding for the spent fuel during transfers between the K-East and K-West basins. The performance criteria for the cask are that the lid will remain attached to the body and that cask welds will not crack or separate. The cask lid to body seal integrity was not evaluated as the cask is not required to retain water following a drop accident. The test cask was dropped 8 feet in four different configurations. After it was determined that the test cask passed the performance criteria with only minor structural deformations, it was dropped 25 feet onto its top edge for informational purposes only. The structural deformations were more severe but the lid remained attached to the cask body. The staff will continue to review the technical basis associated with the structural analysis and drop test performance of the STC. The staff will also review the safety basis ramifications of allowing the cask water and associated sludge to be released during a cask drop accident scenario. (III-A)

Tank Farms: An Office of River Protection (ORP) letter sent to CH2M Hill Hanford Group (CHG) noted that "continuing safety concerns, limited success in reversing a marginal conduct of operations, repetitive nuclear safety authorization basis violations, and the absence of fundamental behavioral change in the field demonstrate no improvement to the required safety margin for operations." The letter also raises concerns with CHG's slow-paced response to ORP and external reviews as well as CHG's Independent Performance Evaluation. Dr. Boston stated that he expects "immediate action that results in near-term, visible, and sustainable improvements to the safety program." (1-C)

CHG presented their proposed strategy for revising the flammable gas controls for waste storage and double shell tank waste feed delivery. Based on the buoyancy and energy ratios, specific gravities, and depth of various layers, the tanks would be classified into 3 waste groups which have different ignition and monitoring controls for the dome intrusive region. No ignition controls would be required for the waste intrusive or ex-tank regions. Operations that cause a large disturbance of the solid waste would be stopped if 25% of the lower flammability limit was exceeded. The Site Rep suspects that decanting will require continuous monitoring though.(3-A)

Plutonium Finishing Plant: The Standard Startup Review dry run for the direct discard of solutions went pretty well. Oxalate precipitation of solutions began. Since the furnaces will be needed for stabilizing precipitate cake longer than expected, the polycube milestone may be missed by approximately four months. Although the statistical evidence continues to mount that pores in the outer 3013 can weld may be caused by organic lubricants used in dummy inner cans, gas chromatography analysis did not detect any organic gases during welding. (3-A)
cc: Board Members