

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 21, 2001

TO: K. Fortenberry, Technical Director
FROM: D. Grover and M. Sautman, Hanford Site Representatives
SUBJ: Activity Report for the Week Ending December 21, 2001

Plutonium Finishing Plant: In response to staff concerns, PFP has reduced the required action time for stopping plutonium handling and processing from 48 to 8 hours when they can no longer satisfy the Limiting Condition for Operation for having 2 operable high efficiency particulate air filter stages. PFP also performed a 25-can cold run using their new process controls. Radiography of the outer can welds found that 16 welds had no pores, 6 had acceptable pores, and 3 had welds whose pores exceeded Savannah River Sites's (SRS) acceptance criteria. What is especially surprising is that one can, whose chamfer was well below the limit, had an unacceptable pore that was offset about 90 degrees from the weld start/stop point. In the past, the pores had been limited to the weld start/stop region. It is not known why the new controls did not produce compliant welds although the fact that pores tend to be somewhat larger for welds made at Hanford than at SRS for a given set of parameters may be relevant. (I-C, III-A)

224-T: Workers entering C Cell to perform characterization found about 11 feet of water (nominally 150,000 liters) inside a 19-foot deep sump. Three process tanks are completely submerged and piping at the waterline is corroded. It is suspected that rain/snow melt has been intruding through sink holes located directly above the pipe trench that goes between C Cell and T Plant. Planning has begun to sample the water and likely sludge on the floor. (III-B)

Tank Farms: The Office of River Protection (ORP) reduced CH2M Hill Hanford Group's FY2001 fee by \$2M for failing to implement expeditious corrective actions to identified safety problems and for protracted and incomplete responses to several external reviews. The Board staff also discussed with ORP concerns with recent determinations of Potential Inadequacies of the Safety Analysis without apparent regard to safety significance. Final sampling results confirm that AZ-102 hydroxide concentrations are outside Technical Safety Requirement limits. Mr. Sautman observed parts of a demonstration of the pit viper's ability to cut and remove objects, collect debris, apply fixative, and prepare surfaces with its robotic arm. (I-C)

Spent Nuclear Fuel Project: The Primary Cleaning Machine (PCM) used to wash fuel prior to loading into Multi-Canister Overpack (MCO) baskets has been exceeding a low rotation speed trip point halting fuel processing operations. The project believed the trips were due to increased friction from bearings nearing the end of their useful life. As a result, the bearings were changed out prior to the planned replacement during the next maintenance outage. However, the PCM tripped again with new bearings after the shaft had rotated to the point where the top and bottom portions of the shaft connect. Examination of the bearing shows a discoloration in this area of the bearing. After examining the PCM for gross damage which could hinder rotation, the project plans to try to realign the bearings and force rotation in the maintenance mode in an attempt to "burn-in" the bearings. The engineering staff has not determined if bearing alignment or PCM wash basket misalignment is the problem, however, the project plans to risk damaging the new bearings and PCM drive train as a test to help determine the cause of the trouble. (III-A)
cc: Board Members