

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 30, 2002

TO: K. Fortenberry, Technical Director
FROM: D. Grover and M. Sautman, Hanford Site Representatives
SUBJ: Activity Report for the Week Ending August 30, 2002

Plutonium Finishing Plant (PFP): Since resuming polycube direct oxidation in July, furnaces have had to be shut down at least 13 times due to inadequate off-gas flow rates. The Site Rep met with PFP management to discuss 3 issues with the shutdowns: 1) can 25% of the lower flammability limit (LFL) be reached inside the furnace considering the reduction in off-gas flow rate and the duration of reduced flow, 2) conduct of operations concerns with operating in a manner that furnaces are routinely having to be shut down because the limits cannot be met, and 3) the need for compensatory measures until the process can be modified and equipment upgraded. The roughing filters used in these furnaces may be more prone to plugging by condensation than those used in other furnaces since their pore size is 98% smaller. In addition, the vacuum system for some of the furnaces is barely able to maintain the minimum off-gas flow rate under normal conditions. As a result of these discussions, PFP implemented a change Thursday to reduce the batch size by 50% to see if this eliminated plugging. In addition, the procedure will be modified so that the furnace doors will be opened after plugging to prevent accumulation of combustible gases and reduce further oxidation by quickly cooling the furnace. PFP hopes that changing the filter pore size and upgrading one of the vacuum systems will improve their ability in the longer term to maintain off-gas flow rates. (III-A)

Spent Nuclear Fuel Project (SNFP): Fluor Hanford successfully completed recovery actions to seal the leaking process port 3 valve on Multi-Canister Overpack (MCO) #98. Recovery actions included venting the MCO to near ambient pressure, removing the process connection, and installing a cover plate over port 3 to seal the MCO. This was followed by repressurization of the MCO and leak testing to ensure that the process connection had been effectively sealed. During recovery planning, two principle safety concerns were raised which involved air ingress into the MCO and adequacy of controls for protection of workers. The Board's staff and Site Representatives worked with Department of Energy representatives to resolve all concerns. Overall, recovery actions were smoothly executed and completed well within the allowable 3 hour time period established for safety purposes. (III-A)

Waste Treatment Plant (WTP): The Analytical Laboratory hot cells are designed as seismic category (SC) I and the rest of the facility SC-II to eliminate 3-over-1 issues where the building could impact the hot cells. However, Bechtel National Inc. (BNI) has proposed downgrading the hot cells SC which would allow the rest of the lab to be built to the Uniform Building Code. At a design review, BNI stated that the basis for this proposal was a change in target frequency methodology and raising the facility worker evaluation guideline from 25 to 100 rem. (I-C)

Tank Farms: The staff is wary of a proposal to not require any Technical Safety Requirement-level ignition or flammable gas monitoring controls during the decanting of certain tanks based on a model that has never been validated against an actual decanting operation. These tanks can have induced (but not spontaneous) gas release events and are estimated to contain sufficient retained gas to achieve 100% of the LFL in the headspace if all the gas was released at once.(I-C)

cc: Board Members