

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 22, 2002

TO: K. Fortenberry, Technical Director
FROM: D. Grover and M. Sautman, Hanford Site Representatives
SUBJ: Activity Report for the Week Ending March 22, 2002

Plutonium Finishing Plant (PFP): The Department of Energy (DOE) has approved adding silica to certain precipitated plutonium solutions that strongly reabsorb moisture in order to allow the thermal stabilization inside gloveboxes without humidity control. PFP plans to use their humid gloveboxes versus their dry ones to avoid the additional time and dose that would be required. However, the amount of silica required exceeds that allowed in mixed oxide fuel. The staff questions the prudence of intentionally creating a material that does not have a disposition path. Any pretreatment needed to remove the silica in the future would likely eliminate any short-term benefits. The staff has brought this issue to the attention of DOE-Environmental Management. PFP has also been struggling to process atypical plutonium solutions such as carbonate solutions that plug lines and a container of old tributyl phosphate that due to hydrolysis/radiolysis now has the consistency of molasses. PFP is evaluating options for both, including possibly trying to dispose of the untreated organic solution as mixed waste. This option is not covered by the Implementation Plan and may not meet the Interim Safe Storage Criteria. (III-A)

Waste Treatment Plant: Mr. Sautman observed 2 system design reviews this week to see if there had been any improvements in response to staff concerns communicated to DOE and Bechtel management last month. Although one review was informative, the other was ineffective because insufficient information was provided to the reviewers. For example, the design criteria and calculation discussions consisted of just a list of high-level documents (e.g., Integrated Safety Management Plan) or titles (e.g., vessel sizing calculation) with no elaboration. As a result, the presenter was able to cover introductions, agenda summary, system overview, schematic of system, design criteria, safety controls, ALARA design features, calculations, drawing status, design changes, and other inputs within the first 15 minutes. (I-C)

Spent Nuclear Fuel Project (SNFP): Following the damage to the gantry crane mast used to load fuel baskets into the Multi-Canister Overpack, Mr. Grover has reviewed the activity level hazards analysis process used to develop controls for SNFP operations. Operations that are clearly high or medium risk, e.g. removing a loaded cask from the basin, have been classified as low risk. This category is identified as minor maintenance or routine work and does not require an integrated team to evaluate the hazards and controls for the work. The hazard analysis process used by the project automatically identifies controls for hazards, however, some of these controls do not apply for some operations and are not implemented in the field. The team conducting the hazard analysis did not identify this and remove these controls from the control set for the operation. Finally, the operations organization did not participate in several of the hazard analyses reviewed. (I-C)

Recommendation 2000-2: A DOE-EH comprehensive fire safety review identified 2 safety deficiencies at Hanford. First, the Office of River Protection had not established a formal fire safety program consistent with DOE requirements. Second, technical safety requirements have not been developed for the site water delivery system nor has apparent age-induced pipe degradation in the system been analyzed to assure that a sufficiently reliable source of water is maintained available for suppressing a design basis fire originating in a PFP building. (I-C)

cc: Board Members