DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 3, 2004

TO: K. Fortenberry, Technical Director
FROM: D. Grover and M. Sautman, Hanford Site Representatives
SUBJ: Activity Report for the Week Ending December 3, 2004

Tank Farms: In response to staff concerns with the safety classification and testing of isolation valves, the Office of River Protection directed the contractor to classify waste transfer valves that provide double-valve isolation as safety significant. In addition, valves are to undergo initial and periodic testing in accordance with engineering standards. Periodic testing or valve replacement will be based on valve design life, service conditions, and valve locations with respect to accessibility and worker hazards. Safety management programs will provide facility worker protection downstream of those valves where testing is not possible due to design or radiation dose considerations. In the interim, the upcoming S-102 and S-112 retrieval waste transfers were allowed to continue since their respective isolation valves had been tested. A Site Rep review of the radiological monitoring plans for these transfers identified that radiation surveys were not going to be performed downstream of the isolation valve despite the stated expectation in the authorization basis. The radiation survey plans for these transfers as well as the general transfer radiological control procedure were revised to incorporate this expectation.

CH2M HILL Hanford Group completed a new common cause analysis (CCA) of 13 safety events (including the 10 noted in the Board's 9/8/04 letter) which identified 8 common causes involving every step of Integrated Safety Management. This more comprehensive and methodical CCA is a higher quality analysis than a previous attempt. The most common issues involved: lack of specificity in the work package (92%), missed precursor indicators that provided the opportunity to prevent or minimize the impacts of an event (85%), chain of command/command and control (83%), identified controls were inadequate (69%), scope definition/technical direction inadequate to perform hazards analysis (69%), hazards encountered not evaluated (62%), inappropriate response (62%), and communication breakdowns (62%).

Waste Treatment Plant: After evaluating a variety of controls (e.g., active ventilation, sprinkler systems) to address an Analytical Laboratory hot cell fire, Bechtel has decided to continue to credit passive confinement instead due to the amount of conservatism in their analysis compared to expected conditions. One Site Rep concern is that Bechtel does not plan to revise the dose consequence calculation and explicitly identify which "conservatisms" were eliminated. Without doing this, it will be hard to determine which assumptions are affected and whether any controls are needed to ensure that actual conditions do not exceed the assumed parameters.

Plutonium Finishing Plant (PFP): A Potential Inadequacy in the Safety Analysis was identified for PFP and the solid waste complex related to the use of buoyant plumes in determining dose consequences to collocated workers. The calculations did not consider the potential for a building wake effect to trap the plume at ground level for small fires.
cc: Board members