

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 1, 2001

**TO:** K. Fortenberry, Technical Director  
**FROM:** D. Grover and M. Sautman, Hanford Site Representatives  
**SUBJ:** Activity Report for the Week Ending June 1, 2001

Spent Nuclear Fuel Project (SNFP): Mr. Grover observed the lowering of the first manual fuel loading table for Multi-Canister Overpack (MCO) baskets into the K-West Basin. This construction work is being done in the vicinity of existing fuel retrieval system operations and is having a negative impact on production rates. While the project is meeting the 24 MCO per year rate outlined in the project baseline, two-shift operations and increases in efficiency have not yet achieved the anticipated results that are needed along with the manual process tables to meet the 80 MCO per year production rate committed to by the beginning of August 2001. (III-A)

Tank Farms: As required by their new Technical Safety Requirement (TSR), CH2M Hill Hanford Group (CHG) has written a recovery plan since it was identified that AY-102's chemistry was out of specification. Interstitial liquids from AY-102 sludge samples obtained in June 2000 had nitrite levels below the detection limit. Since the interstitial liquid pH is between 10.8 and 11.1, the tank's steel wall is expected to still be in the passive region. (Please note that caustic was also added to the tank in February 2001 to bring the supernatant's hydroxide concentration back into specification). The settled solids layer mostly consists of sludge sluiced from tank C-106. Samples taken in October 1999, shortly after sluicing, showed the supernatant and the sludge interstitial liquid to have approximately the same nitrite concentration. The supernatant is still slightly above the lower nitrite limit, although the concentration fell by more than 50% between October 1999 and June 2000. On the other hand, the sludge interstitial liquid has been completely depleted of nitrite over the same time period. This implies that the sludge nitrite consumption rate is much faster than migration of nitrite from the supernatant into the sludge by diffusion and natural processes. CHG has proposed adding sufficient nitrite to the supernatant by November 30, 2001 to adjust the bulk waste composition to at least 0.1 M. CHG is considering the use of air lift circulators to speed up the adjustment of the interstitial liquid's chemistry. However, the sludge's depth and rheology may significantly reduce their effectiveness and an authorization basis change would also be required. (3-A)

Plutonium Finishing Plant: Mr. Sautman walked down the 2736-ZB nondestructive assay laboratory with the Deputy PFP Director. This room is full of calorimeters, segmented gamma scanners and other assay equipment. In response to the Department of Energy's direction, PFP is developing a plan to reduce the combustibles in this room by relocating several bookshelves, getting rid of boxes of computer paper, covering wood on the exterior of the calorimeters with sheet metal, relocating radiography transformers that reportedly contain 120 gallons of oil, etc. While these actions will significantly reduce the combustible loading of the room, it is not clear yet whether this will be sufficient to eliminate the risk of flashover. (3-A)

cc: Board Members