

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 20, 2002

**TO:** K. Fortenberry, Technical Director  
**FROM:** D. Grover and M. Sautman, Hanford Site Representatives  
**SUBJ:** Activity Report for the Week Ending December 20, 2002

Spent Nuclear Fuel Project (SNFP): DNFSB staff members V. Anderson, D. Ogg, and B. Rosen were onsite this week reviewing the preparations to remove sludge from the basins and place it into storage at T Plant. Significant design, testing, and configuration management issues need to be resolved with the K-East sludge removal equipment prior to startup of the system. The staff also reviewed activities to prepare for welding Multi-Canister Overpacks (MCOs). Performance of a satisfactory full volumetric weld was not demonstrated during factory acceptance testing. The project is currently working to qualify the welding process in the Canister Storage Building. The staff identified that the project has not evaluated the entire MCO inventory for suspect seals despite repetitive problems with the MCO mechanical sealing process. The need to evaluate the entire inventory is emphasized by another MCO leak test failure this week. (III-A)

Tank Farms: The Site Rep observed workers disassemble and inspect the flanged connection for the failed hose-in-hose transfer line (HIHTL). Despite repeated earlier flushes, dark, stratified solid material (not clear if just dried high-level waste or whether it was some other debris) filled between 1/3 and 2/3 of the cross-sectional areas of the primary hose at the three locations that were inspected. Not only was there no obvious failure mechanism at the flanged connection, but it was not clear that this was necessarily the failure location. Several people expected a more noticeable failure mechanism since during earlier flushes of the primary hose, workers had observed that approximately 20% of the flush water flowed out of the secondary hose. The gasket reportedly looked fine and all the bolts met torque specifications. Although it was suspected that a cocked hose may have allowed waste to leak past the clamps, the manufacturer's representative did not seem to think the as-found condition to be that abnormal. CH2M Hill Hanford Group (CHG) is still evaluating the data and working on a final report.

The Site Rep is skeptical of CHG's assumption that no Operational Readiness Reviews (ORR) will be required for any of the planned waste retrieval, supplemental treatment, and tank closure activities. Phase 2 of the C-106 waste retrieval project will involve retrieving hard-heel sludge using an enhanced sluicing system and transferring the slurry through a HIHTL to another tank. While sluicing of HLW has been performed as recently as 1999, sluicing, retrieval, and transport of hard-heel sludge appears to meet the definition of a new activity that would require an ORR. Potential treatment technologies like steam reforming, containerized grout, or bulk vitrification have not previously been performed at tank farms. (III-A)

Plutonium Finishing Plant: In response to staff concerns about how PFP's plutonium is represented in the Materials Identification and Surveillance (MIS) Program per DOE-STD-3013, PFP is developing a crosswalk of their inventory material categories to samples currently in the MIS program. In addition, PFP is looking at possibly using prompt gamma data to identify cans which may contain material that is currently not represented. (III-A)