DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 29, 2001

TO: K. Fortenberry, Technical Director
FROM: D. Grover and M. Sautman, Hanford Site Representatives
SUBJ: Activity Report for the Week Ending June 29, 2001

Spent Nuclear Fuel Project: The Cold Vacuum Drying (CVD) Facility violated a TSR administrative control by opening the cask trailer receiving door while processing a Multi-Canister Overpack. This occurrence breached the secondary confinement barrier for release of radioactive material from the facility. The operator opening the door was performing a security surveillance on the door using an administrative procedure. Administrative procedures typically are used to establish processes and requirements - not perform work. As a result, it appears that the work control process that implements the Integrated Safety Management System was bypassed which is evident from the failure to implement the administrative control. The failure of CVD management to identify this shortcoming on a weekly surveillance performed for the last 6 months may also comprise a deficiency in the implementation of the TSR administrative control for Safety Programs.

224-T: After plutonium concentration operations ceased in 1956, the 224-T Bulk Reduction Building process cells were sealed and isolated from the rest of the facility. In response to concerns the Board staff raised about lack of characterization data and authorization basis coverage, Fluor Hanford entered E Cell this week to begin Phase I characterization. Most of the time was spent replacing the very firmly attached door and door cover with a new metal door. Surveys taken at the doorway found low alpha contamination, no beta-gamma contamination, and no measurable dose rates. Operations personnel believe that this data combined with favorable industrial hygiene data will allow them to downgrade from supplied air to powered air purifying respirators. Current plans are to enter the 6 cells, assay each of the tanks, and use this information to finally develop an authorization basis for this portion of the building. (III-B)

Plutonium Finishing Plant (PFP): Radiographs of weld cross-sections found pores in 18 of the 25 pre-production test and 6 production dummy outer 3013 cans. Five of these cans had pores whose diameter exceeded the 0.03 inch ASME code limit and some cans had as many as 3 pores. In addition, 1 additional can had inconsistent penetration (i.e., the inside tip of the weld bead had an indentation) possibly due to the pressure of trapped gases trying to escape through the joint. None of the welds had any holes through the weld and in all cases the cans had passed visual inspections and leak checks. All of the defects were located at the start/end of the weld where blue discoloration indicates the presence of oxidation. The cause of the defects is still under investigation although it might be due to impurities in the purge gas or inadequate purging of the can prior to welding. The fact that the interference fit of the can and lid is tighter than originally planned may lessen the ability of gases to escape. Additional analysis of the welds is being performed to help identify the cause. Of the couple hundred test outer cans Savannah River has welded, they only found one pore and it was of an acceptable size. PFP intends to keep welding outer cans while they try to develop a technical basis for accepting “as is” the 200 outer cans already welded. The Site Rep is skeptical of this approach unless they can bound with some confidence the number and size of the pores and penetrations of previously welded cans. Preliminary information indicates that this problem likely does not exist for bagless transfer system cans due to differences in the joint design, but this is still being evaluated. (III-A)