

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 11, 2004

TO: K. Fortenberry, Technical Director
FROM: D. Grover and M. Sautman, Hanford Site Representatives
SUBJ: Activity Report for the Week Ending June 11, 2004

Spent Nuclear Fuel Project (SNFP): While returning the Integrated Water Treatment System to service following a routine backflush of the filters, pressure readings indicated problems with the system. When operators entered the east bay of the K-West Basin heavy sludge loading in the water was noticed in the area of the settler tanks. It is believed that the settler tank rupture disk burst allowing the release of the sludge. This situation occurred approximately 1 year after the start of operations. The cause was determined to be an end of life failure of the rupture disk, which the manufacturer had recommended to be replaced yearly. SNFP decided not to perform this annual replacement due to the short expected life of the fuel processing campaign. Currently visibility problems from the sludge are expected to stop work in the east bay, including Fuel Transfer Shipments and replacement of the rupture disk. The inability to perform the latter will also halt fuel processing activities until sufficient sludge settles out of the water. (II)

Tank Farms: The C-200 Series Tank Waste Retrieval Readiness Assessment resulted in 10 pre-start findings, 2 post-start findings, and 16 observations. Pre-start findings addressed radiological practices, drill performance, alarm response, operator proficiency, and housekeeping. (II)

CH2M Hill Hanford Group has decided to limit the operating level increase to only AP farm, which has been hydrostatic tested above the proposed new level. The original proposal was to raise the operating level above the level that had been tested, which raised some staff concerns. (II)

A Site Rep review of the Radiation Work Permits for 2 high risk jobs identified general area contamination void limits 47 times higher than localized area limits, action levels that directed actions above void limits, and estimated contamination levels 10 times higher than the void limits. (IV)

The ventilation system for AY and AZ farms, a flammable gas control, has been shut down for three months. A blank flange, installed years ago, was found blocking the condenser's drain line. The resulting algal growth in the system prevented draining of the condensate seal pot downstream and caused the system to shut down due to a high level alarm on the condensate seal pot. (III)

Waste Treatment Plant (WTP): An inspection of the Submerged Bed Scrubber Condensate Receiver Tank (already the subject of many nonconformance reports, two root cause analyses, and months of rework) has found that several dozen of the internal welds have flaws. Tests data also indicates that the erosion rate for 2 key vessels containing waste and glass formers is so high they could fail within five years. A crack has been found in the casing of the borehole discussed in last week's report. (III)

The Site Rep observed gas release tests using a sparge-only configuration (i.e., no pulse jet mixers). The spargers rapidly released the gas and there was very good overlap of the spargers' zones of influence. In fact, the surface agitation was so turbulent that waste entrainment in the ventilation system, waste splatter on equipment, and vibrations could be issues if operated in such a manner. (II)