

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 25, 2008

**TO:** T. J. Dwyer, Technical Director  
**FROM:** W. Linzau and R. Quirk, Hanford Site Representatives  
**SUBJECT:** Hanford Activity Report for the Week Ending July 25, 2008

Board staff member S. Stokes was on-site observing a workshop on how to design the Waste Treatment Plant (WTP) fire protection systems in compliance with DOE Standard 1066.

Spent Nuclear Fuel (SNF) Processing: The contractor provided apparent causes and corrective action plans for the SNF Operational Readiness Review findings. The site rep questioned both the Richland Operations Office (RL) and the contractor why root cause determinations, as required by DOE Order 425.1, were not completed. RL concurred with the site rep's observations that there appeared to be some programmatic deficiencies and that root cause determinations will be required, but the root cause determination will be post-start actions. Additional oversight will be used as a compensatory action until the root causes are determined and corrective actions are implemented. RL authorized the restart of the SNF operations.

Sludge Treatment Project: The site rep met with representatives from RL and the contractor to discuss the characterization of the sludge stream called the knockout pot (KOP) sludge. The KOP sludge includes the sludge in the KOPs as well as sludge that was collected in the Integrated Water Treatment System (IWTS) strainers. Four series of inspections are planned over the next few months to provide more information about this sludge. The first phase, nearing completion, will determine the bulk density and radiation levels of the sludge from the IWTS strainers. The next phase will determine the color and size of larger particles as well as the temperature and penetrability of the strainer sludge, and collect and analyze gases that are released by this sludge. The third stage will determine the strainer sludge particle size and density distribution. The final stage will determine particle size and density distribution of the sludge in the actual KOPs.

River Corridor Closure Project: The contractor uncovered six stainless steel vessels that are 10 feet long and eight feet in diameter and several smaller vessels during burial ground remediation. One of the vessels is marked "Fission Product Waste Storage," and one of the smaller vessels contains an estimated 300 gallons of liquid. Initial samples of powder from one of the bigger vessels indicate trace amounts of uranium, americium, and thorium, but no contamination outside the trench has been detected. The site rep conducted a walkdown of the burial ground and noted the vessels remain in the trench, which is posted as a high radiation and airborne contamination area. The project is waiting for the results from additional samples and better characterization before selecting a path forward. In addition to sampling, the contractor is revisiting available records to try to determine which chemical process could have used vessels like the ones found. The project anticipated finding drums in this burial ground, but finding these large vessels was unexpected.

Tank Farms: The SX-104 leak assessment team concluded that it is unlikely that the tank is leaking. The team concluded that the actual interstitial liquid level has been at a level lower than previously believed.