

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 15, 2010

**TO:** T. J. Dwyer, Technical Director  
**FROM:** W. Linzau and R. Quirk, Hanford Site Representatives  
**SUBJECT:** Hanford Activity Report for the Week Ending January 15, 2010

Staff members E. Elliott and J. Troan were on-site for discussions on various Richland Operations Office (RL) projects and performed a walkdown of the Plutonium Finishing Plant (PFP). Outside expert D. Boyd was on-site to evaluate the conduct of operations at PFP.

Tank Farms: The DSA addresses the consequences for explosions in all tanks except for the double-shell tank (DST) with the worst case solids. The dose to the public from an explosion in this DST, if the liquids are removed, is estimated to be 12 rem TED. No safety-class controls are identified and the safety-significant ventilation system credited for decreasing the frequency of an explosion will be downgraded to defense-in-depth when the revised DSA is implemented. An explosion in any tank is considered to be an extremely unlikely event but changes to a beyond extremely unlikely event in the revised DSA. The safety analysis credits the liquids in this tank for significantly reducing the consequences from an explosion. The site rep informed an Office of River Protection (ORP) nuclear safety engineer of project plans to remove liquids in this tank to facilitate retrieval of waste from a tank in C Farm. The engineer then informed ORP project personnel that additional safety-related controls may be required before any liquid is removed from this DST.

100 K Project: The site rep conducted a walkdown of the K East Reactor with contractor and RL personnel and discussed the plans for reactor core removal. The contractor is preparing to collect core samples of the biological and thermal shields, and the graphite core in four locations. The site rep questioned the lack of sample data during the conceptual design review held in August (see Activity Report 8/14/09). Project plans include the installation of additional supports for the cooling water tunnel ceiling that will bear the weight of the large remote-operated crane that will be used to demolish the shields and remove the core. The project is using a modified approach to DOE Order 413.3A, and RL is evaluating if this work constitutes a major modification. The Project Execution Plan has not been approved, but the contractor plans to complete the detailed design during the next few months. The contractor added senior personnel to review the subcontractor's design efforts, and a formal detailed design review was added to the schedule.

Plutonium Finishing Plant: RL sent a letter to the contractor requesting a causal analysis and corrective actions for a series of events in which the facility's ventilation system was negatively impacted (see Activity Reports 12/24/09 and 12/11/09). The letter attributes these events to an inadequate level of concern for or control of the ventilation system. The site reps discussed the problems with the contractor management who said they were developing corrective actions prior to RL sending the letter.

River Corridor Closure Project: The site rep met with managers of the D&D activities at Building 327 to review the status and discuss concerns. Workers have completed using a diamond wire saw to cut free the hot cells in preparation for disposal. The project is currently removing interferences for installing floor supports in the basement to bolster the process area floor. The additional floor supports are required to allow a gantry crane to roll into the facility and retrieve the hot cells. Once the hot cells are removed from the facility, they will be grouted and shipped to the Environmental Restoration Disposal Facility.