

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 20, 2009

**TO:** T. J. Dwyer, Technical Director  
**FROM:** W. Linzau and R. Quirk, Hanford Site Representatives  
**SUBJECT:** Hanford Activity Report for the Week Ending February 20, 2009

Waste Treatment Plant: In January, the Office of River Protection (ORP) directed the contractor to suspend ongoing work related to providing fire protection for HEPA filters equivalent to DOE STD 1066 (see Activity Report 1/23/09). In addition, ORP requested a plan and schedule for analysis and testing that should be performed to support compliance with DOE O 420.1B. Last week the contractor submitted its plan to comply with DOE O 420.1B, Chapter II, Fire Protection. The contractor's stated purpose of the plan is a qualitative evaluation of operational and programmatic risks. The evaluation plan appears to focus on the costs of fires impacting the HEPA filters, such as equipment loss, cleanup, filter replacement, and lost production. After the costs associated with a fire impacting the HEPA filters is determined, acceptance criteria will be identified and controls will be selected. The contractor will submit the completed design basis event analysis and a draft authorization basis amendment request to ORP later this month.

The contractor conducted a safety-in-design meeting to discuss hydrogen controls for a dead leg of pipe in a drainage collection vessel. The pipe can be fitted with a jumper to allow complete emptying of the vessel using a steam ejector, but the pipe is normally isolated, which provides a location for hydrogen buildup. The team decided the best approach to take is to provide a passive vent for this dead leg instead of an air purge control. This meeting is evidence that the contractor is still designing controls to deal with hydrogen despite suggestions from a recently completed review that these controls will not be required (see Activity Report 1/23/09).

Tank Farms: The site rep met with ORP's Director of the Nuclear Safety Division to discuss last week's transfer of waste to the out-of-specification (OOS) double-shell tank (DST), AN-106 (see Activity Report 2/13/09). ORP believes that no exemption from Technical Safety Requirements (TSR) was required because the transfer was the continuation of an ongoing transfer. The TSR requires an evaluation of the end state prior to a waste transfer. A separate TSR requires a tank found to be OOS to have its chemistry adjusted within 30 days, and, if unable to restore the chemistry, the contractor must write a recovery plan with corrective actions. The ORP-approved recovery plan extended the time to get chemistry back into specification to expedite the retrieval of single-shell tank C-110. The recovery plan and ORP's approval of it was not consistent with the intent of the TSRs, which is to limit the time OOS condition is allowed to minimize tank corrosion.

K Basin Closure: The contractor stopped demolition activities of the K East Basin because very low concentrations of radionuclides have been noted in the area's water outfall. The measured levels are well within limits specified in DOE orders, but an increasing trend was noted in samples taken this year. Richland Operations Office and the contractor believe the most likely cause of the increasing concentrations was water sprayed for contamination control or precipitation runoff from the demolition activities in the K East area. Concentrations in the most recent samples decreased after demolition activities that used water for contamination control were restricted. Drain lines from the K East facilities had been previously capped, but the contractor is planning to sample and then grout the diversion box used to collect the drainage. In addition, the contractor investigated other potential sources for the elevated sample concentrations, including water in the K West Basin, but has not found any to date.