

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 18, 2009

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending December 18, 2009

R. Quirk was off-site this week. Board staff members D. Andersen, J. Blackman, R. Kasdorf, A. Poloski, B. Rosen, S. Seprish, S. Stokes, and W. Von Holle, and outside expert J. Stevenson were on-site reviewing the source term evaluations for pipe leak scenarios and engineering analysis methods and design criteria for hydrogen events at the Waste Treatment Plant.

Waste Treatment Plant: The contractor and DOE held two days of discussions to resolve DOE comments on the contractor's engineering methods and criteria document for hydrogen events in piping. DOE was able to close many of their open questions but still had a number of concerns, including how the contractor would account for the possibility of multiple hydrogen events causing fatigue in a section of piping. The DOE code expert also expressed that, along with applying the appropriate codes and standards, it is important to ensure high construction quality.

Late last month the contractor proposed relaxing the quality requirements during the fabrication of safety-significant (SS) structures, systems, and components (SSCs). In August, the site rep identified that the contractor reduced the quality requirements for SSCs that are classified SS for toxicological hazards (see Activity Report 8/14/09). The Office of River Protection (ORP) responded with direction to the contractor to undo the change. The contractor's response to ORP's direction was to seek approval to relax the quality requirements for all SS SSCs (protective controls for toxicological and radiological hazards). The contractor would use a graded approach to quality in which they would provide quality requirements to the fabricators based on NQA-1, but would not require a NQA-1-qualified vendor and would not require a commercial grade dedication. ORP management is evaluating the proposed approach.

Plateau Remediation Contractor: The contractor held a workshop to select an alternative approach for activities associated with the removal of the core for K East Reactor. The focus of this workshop was the dismantlement of the outer shield (the biological shield) to allow access to the inner thermal shield and the graphite reactor core. In August, the project conducted a preliminary design review, but the site rep questioned if they had enough information to claim 30-percent design completion (see Activity Report 8/14/09). At the end of the workshop, the participants selected an approach that uses conventional demolition practices for removal of the steel-clad concrete shield wall and abandoned the plans to use a diamond wire saw. The contractor also plans to investigate the use of shaped charges to aid in separation and fracture of the concrete and steel. Radiological characterization of the core is ongoing and the approach may be revised when this data is available at the end of January 2010.

River Corridor Closure Project: The site rep observed a planning meeting for the upcoming remediation of the buried silos at 118-K-1 Burial Ground. The possibility of high-curie sources and elevated worker dose is causing the contractor to rethink the conventional remediation approach that had been previously proposed. The project is considering options that will allow workers to stay further away during waste removal and the need for additional radiological monitoring. The contractor wants to start remediation of these silos in May 2010.