

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 3, 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 4, 2008

Central Waste Complex: A technical safety requirement noncompliance was declared by the contractor because four bulged drums were sent to an off-site treatment facility prior to venting. The specific administrative control directs that bulged drums shall be retained in an overpack while being vented and during the abatement period, but the venting and abatement did not occur prior to shipment. The drums contained mixed low-level waste and had been overpacked earlier this year when the bulges were noted. When the drums were filled, a cementitious material was used to absorb water, which may have expanded and caused the deformation. The contractor believes the bulging is not due to a buildup of hydrogen or volatile organic compounds. The project is considering corrective actions, including evaluating the rigor of reviews done prior to approving shipment.

Waste Treatment Plant (WTP): The contractor and DOE are discussing allowing the use of the site-specific ground motion (SGM) derived from the borehole data. No problems with structural elements have been noted from seismic loads derived from revised ground motion (RGM), but some equipment, such as tank internal components and shield doors, may require redesign or rework to comply with requirements. If the decision is made to use SGM in the re-analysis of the selective components, this will be the first application of this input ground motion and will require review of the design process.

The site rep met with the contractor to discuss the simulator that will be used to train WTP operators. The contractor stated they do not simulate the accumulation of hydrogen in vessels if normal mixing is lost, and it would only be modeled if the impact can be observed in the control room. The contractor indicated that level changes would probably not be observable, but it is unclear if this would still be true after extended process upsets. The simulator model reflects the design in 2004 but will be updated to incorporate facility design changes prior to use.

Tank Farms: The assessment of tank SX-104 as a potential leaker continues, with levels checked weekly. Analysis of the data indicates that what was thought to be the interstitial liquid level (ILL) was probably the mound of moist saltcake formed at the saltcake/sludge interface that was created when the liquid observation well was installed in late 2006. It is currently believed that the water in this mound is slowly permeating into the saltcake, which diminishes the level indication at the top of the saltcake. The level indication in the sludge has remained constant with no indication of decrease.

River Corridor Closure Project: The site rep questioned whether the debris/soil being transported to the Environmental Restoration Disposal Facility (ERDF) was in compliance with dose equivalent curie (DE-Ci) limits in the Transportation Safety Document. Many of the high-dose items are activated metals that don't contribute significantly to the DE-Ci totals because of the DE conversion factors. The major contributor to the totals is the specks of fuel found mixed in with soil even though activated metals may have higher dose rates. When evidence of fuel is detected (ie. fragments, cesium, or alpha contamination), the project samples that soil/debris to ensure compliance with DE-Ci limits.