

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 6, 2012

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending July 6, 2012

W. Linzau was off-site this week.

Sludge Treatment Project: The Richland Operations Office (RL) issued the Preliminary Safety Validation Report (PSVR) for Phase I of this project, which involves removing the sludge from the K West Basin and placing it in interim storage on the Central Plateau. Both contactor and RL managers told the site rep that the accident analyses addressed by the PSVR are being revised during the final design and the radiological consequences are decreasing. One reason for this is the assumed isotopic mixture used in the limiting accident analyses during the preliminary design has been replaced by one that is based on actual samples of the settler tube sludge. They are also testing passive equipment that would limit the material at risk for the postulated design basis events. If the tests are successful, the new equipment will be credited in the final design.

Tank Farms: Representatives from the Office of River Protection and the contractor briefed the site rep on their efforts to resolve two Justifications for Continued Operation (JCOs) for the safety-significant (SS) waste transfer system. The first JCO deals with piping system components that could experience water hammer events that stress component beyond code-allowed values (see Activity Report 7/22/11); the approved JCO expires on August 1, 2012. The second JCO deals with the potential failure of waste transfer system components due to freezing (see Activity Report 11/4/11); this JCO expires on August 31, 2012. ORP anticipates extending both JCOs, but if the issues are not resolved or the JCOs not extended by August 1, the contractor will cease all waste retrievals and transfers.

For the water hammer JCO, the contractor's proposal will prevent water hammer by replacing a number of valve actuators with slower acting devices. As a means to prevent overpressure problems caused by excessive pump power, they will also upgrade to SS the hydraulic pressure units that provide the motive force for these waste transfer pumps. The existing SS pressure relief devices used for overpressure events would be downgraded to less than SS, but would remain in-service to meet ASME code requirements.

The contractor will propose a new Specific Administrative Control (SAC) to prevent leaks caused by freezing of waste transfer system components. New SS instruments will be used to monitor the temperatures in waste transfer-associated structures, such as valve and pump pits, as well as some transfer lines that are not buried below the frost line. If the measured temperatures are too low, the SAC will require operators to stop the waste transfer. Additionally, the contractor completed tests to prove that the pressure-rated capacities of above-grade transfer hoses are not degraded by freezing.

Emergency Preparedness (EP): The site rep met with the Central Plateau contractor EP program personnel to discuss their efforts during the last year to improve EP at various facilities. They had noted that the EP program had degraded at the 100K Area for various reasons, but believe that their efforts since last October resulted in a significantly improved level of readiness for emergencies, as demonstrated during recent drills and the recent EP annual graded exercise.