DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 16, 2007

TO: K. Fortenberry, Technical Director
FROM: R. Quirk and W. Linzau, Hanford Site Representatives
SUBJECT: Activity Report for the Week Ending November 16, 2007

R. Quirk was out of the office this week.

Waste Treatment Plant (WTP): The site rep met with project engineers to discuss the redesign of tanks in the Pretreatment facility (PTF). Three tanks still at the vendor's shop require modification to the internal structures to account for loads from the revised ground motion (RGM) and multiple overblows (MOBs) of the pulse jet mixers (PJMs). Two of the vessels, ultrafiltration feed preparation vessels 1A and 1B, are completely fabricated and the third vessel, designed to collect plant wash waste, is ready for final assembly. The highest overstressed condition from finite element analysis occurred near the welds connecting the PJMs to their supports. During analysis with the RGM load case, the stresses in the walls of some of the PJMs were about double the allowable. Alternative support arrangements have been analyzed by the contractor and have greatly reduced the localized stresses, but have not reduced stresses to below allowable levels. The contractor is trying to solve this problem and complete all the required preparations so the vendor can start reworking the vessels in May 2008. If no other design solution is found, the vessel internals may have to be replaced to have thicker walls. Vessels currently installed at PTF will undergo the same analysis, but the project has time to wait for data from ongoing PJM/MOB testing (see Hanford Activity Report 11/17/06 and 2/23/07).

Solid Waste Storage and Disposal Project: The site rep observed waste retrieval teams conducting dry runs at the 12B burial grounds in the 200 East Area. The teams are practicing in preparation for a management self-assessment starting next week and the contractor readiness assessment starting the first week in December. The training was being conducted in a large weather enclosure (100 feet wide by 150 feet long), which is held down by concrete blocks cabled to the frame. The dry runs were stopped by the Shift Duty Officer when he learned that the shackles used in the hold-down system had been tested and the strength was significantly less than expected. It is currently unclear if these shackles are suspect/counterfeit material.

A violation of a Technical Safety Requirement was declared when a retrieved drum with a 17-percent hydrogen concentration was moved from the diffusion zone to a shipping zone before the required venting time period had been completed. Drums with elevated hydrogen concentrations are segregated and allowed to vent until concentrations are below five percent.

Tank Farms: During work to upgrade the Monitoring Control System at the 242-A Evaporator, the slurry recirculating pump was inadvertently started and run for about 30 hours without seal water flow. The recirculation system was empty and no release of contamination was detected. The apparent cause of the inadvertent start was a newly installed relay that failed.

Site Closure: Non-essential workers were sent home Monday afternoon due to a dust storm created by high winds. The dust storm caused low visibility and poor driving conditions. The loss of vegetation soil cover from the range fires in August contributed to an unusual amount of suspended dust. Fire damaged areas are currently being seeded to prevent wind erosion.