

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 2, 2005

TO: K. Fortenberry, Technical Director
FROM: D. Grover, W. Linzau, and R. Quirk, Hanford Site Representatives
SUBJ: Activity Report for the Week Ending September 2, 2005

Transuranic Waste Drum Retrieval: Following the breached drum event discussed in last week's activity report, Fluor Hanford suspended retrieval work. This week the project finalized planning that had been previously initiated to deal with an increase in the number of degraded drums in some trenches. The project formalized guidance and developed action levels that would require additional controls depending on storage records and drum conditions. The project also identified a set of conditions that may indicate the hazards exceed those evaluated by the standing Job Hazards Analysis (JHA). This will trigger a drum specific JHA and require specific subject matter experts be added to the evaluation team based on the condition identified.

Tank S-112: Past retrieval techniques for S-112 used saltcake dissolution and modified sluicing to remove approximately 95 percent of the waste, but approximately 4,100 cubic feet of hard waste remains (heel). CH2MHill Hanford Group (CHG) recently tested the ability of a remote-controlled water lance (RWL) to breakup hardened material and has decided to test its ability to breakup the heel in S-112. Waste will not be retrieved during RWL operation, and the test is not expected to breakup the entire hard heel. The demonstration equipment would be installed by the end of September and operational by mid-October. Both DOE and CHG managers acknowledged that the schedule is ambitious but emphasized that the authorization basis review, test development, and execution must be fully consistent with DOE and CHG procedures.

Waste Treatment and Immobilization Plant (WTP): Project engineers are currently working to correct errors discovered in the structural steel design for the Analytical Laboratory. The errors involved incorrect analysis of the member forces, computer modeling that didn't match the design, and incorrect methodology used in weld calculations. In addition, the design of the trusses, vertical braces, and columns were not checked to ensure that they met all the code requirements. The Bechtel National, Inc. (BNI) initial response was to put all affected drawings and shipments from the steel fabricator on hold. In order to fix the design, engineers are correcting the computer model, rerunning the analysis, and then redesigning the members and connections. The redesign work is expected to be completed in about three weeks. The project has determined that some of the steel already on site will have to be modified or replaced and that hundreds of drawings will have to be corrected. DOE's structural Peer Review Team has been directed to review the redesign and met with BNI engineers this week during their ongoing review of the WTP structural design. A formal root cause analysis is underway but it is unclear how BNI will address the failure of quality controls for the engineering process and the wider implications for conduct of engineering at WTP.

cc: Board Members