

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 28, 2006

TO: K. Fortenberry, Technical Director
FROM: R. Quirk and W. Linzau, Hanford Site Representatives
SUBJECT: Activity Report for the Week Ending July 28, 2006

Hoisting and Rigging: Inadequate planning for work involving rigging resulted in problems at K East (KE) Basin and the Waste Encapsulation and Storage Facility (WESF). A vessel, commonly known as the clarifier, was retrieved from the North Loadout Pit (NLOP) in KE but could not be placed in a waste container because a void limit in the Radiological Work Permit was exceeded. There were no contingencies in the work package for returning the vessel to a more stable position, such as in the NLOP. The vessel, which weighed more than a ton, was left suspended in the air overnight. The following morning the vessel was placed in the waste container after more shielding had been installed. The event at WESF was not as significant but also demonstrated poor work planning for the use of a crane to move waste.

Tank Farms: The expert panel reviewing the Demonstration Bulk Vitrification Plant (DBVS) provided their preliminary observations on the facility design, safety, maintenance and operation. The panel noted that there was substantial focus on and testing of the DBVS melter but this needed to be expanded to include other critical systems, such as the offgas and the melter feed system. It was noted that the liquid separations system may not meet the assumptions used to classify the DBVS as a Hazard Category 3 nuclear facility because it may not remove some of the smallest particles. The melter feed system was noted to be complex and may be unworkable without modification. The team also noted that the review of the safety basis was challenging because the current design is not consistent with the original Preliminary Documented Safety Analysis (PDSA). It is hoped that many of the issues can be resolved before the draft report is issued in three weeks. The final report will be issued by September 28, 2006, coinciding with the release of the revised PDSA.

This Office of River Protection approved a change to the Documented Safety Analysis (DSA) and Technical Safety Requirements (TSR) for the 242-A Evaporator that added controls for preventing flammable gas accumulation in the evaporator. The change was required because the analysis methods previously used for the 242-A DSA were less rigorous than the methods used to calculate flammable gas buildup in the tank farms. Similar upgrades to the 242-A DSA and TSR were required earlier this year when questions were raised about the analysis methods used for fires. Approximately 15 operating procedures will have to be revised and training will have to be completed before the planned hot run of the evaporator next month.

Plutonium Finishing Plant (PFP): There were two closely related criticality non-conformances this week that are related to an earlier finding that the fissile mass inside a number of 3013 cans did not address uncertainty in the non-destructive assays. Last month the analyzed values for the masses in the cans were increased by the appropriate amount. However, it was not noticed until this week that the new mass values for four of the cans stored in two vaults exceeded the values used for criticality safety.