

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 27, 2005

TO: K. Fortenberry, Technical Director
FROM: D. Grover, Hanford Site Representatives
SUBJ: Activity Report for the Week Ending May 27, 2005

Messrs. Feldman, Matteucci, Shackelford, Troan, and Zavadoski were onsite reviewing the Demonstration Bulk Vitrification Project. Messrs. Plaue and Stokes were on site providing oversight of the Hydrogen in Pipes and Ancillary Vessels external review. Messrs. Quirk and Sautman were onsite performing site rep duties.

K Basin Closure Project: During operations to fill the fourth Large Diameter Container (LDC) with North Load-Out Pit (NLOP) sludge a valve in the off gas system failed in the open position. Basin water progressed up the off gas system overwhelming the moisture separator and passing through a sintered metal HEPA filter. The water then wetted the filter on the environmental record sampler and a small amount apparently leaked out of the exhaust pipe on the outside of the facility. This was discovered when radiological surveys were performed in response to the problems with the record sampler. The project was nearing completion of their effort to retrieve NLOP sludge into LDCs. As a result of this event and the expected time to return the system to full service, continued sludge retrieval has been terminated using this system. The remaining NLOP sludge will be consolidated with the bulk of the sludge in the basin. The project is working on a temporary modification to the off gas system to allow purging and sealing the cask for shipment.

Waste Management Project: The site rep attended an initial planning meeting for the in-situ radiation dose measurements and radiography of the drums containing plutonium 238. The scope of work was broken down in reasonable size substeps for hazards analysis. The project was also identifying process upsets and defining contingency plans for these abnormal conditions. One area of concern was in evaluating abnormal radiation dose readings. The project was evaluating doses which would exceed the limit on their radiological work permits. The contingency plans being evaluated were additional shielding or remote handling. However, elevated dose rates could indicate a breach of the inner containers. The integrity of these containers is an assumption that reduces the consequences of an accident in the facility safety basis. The site rep brought this to the project's attention. The project has determined that they will need to identify a dose level which indicates failure of the containers and develop contingency plans that will be compliant with the safety basis.

Plutonium Finishing Plant: The site is evaluating the feasibility of a new plutonium storage facility. The preconceptual design calls for an existing underground tank vault facility to be modified. The concept includes installing tubes in the vaults and filling the surrounding spaces with concrete. The staff will continue to follow this proposal.

Cc: Board Members