DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 13, 1999

TO: G. W. Cunningham, Technical Director

FROM: R. Arcaro, Hanford Site Representative

SUBJ: Activity Report for the Week Ending August 13, 1999

Outside Expert David Boyd was on site to observe the Phase II Verification of the Tank Farms Integrated Safety Management System.

A. Plutonium Finishing Plant: Equipment check-out of the prototype calciner was performed during the week. Cold runs with nitric acid are expected to begin next week followed by start of hot operations the week of August 23rd. DOE approval was received on the documentation necessary to allow a significantly larger charge size for thermal stabilization. However, various equipment problems with the furnaces have slowed stabilization of organic-bearing sludges. A return to three-shift operation would accelerate stabilization activities, but PFP does not have sufficient qualified shift managers for three-shift operations. (III-A.1)

B. Tank 101-SY Level Rise: Lockheed Martin Hanford Company (LMHC) deployed a spray device in Tank 101-SY. This deployment had two primary purposes: To prepare for installation of the transfer pump, and to evaluate the response of the waste to a large water addition. The spray created a hole in the crust that is expected to remain in place to support the pump insertion in the next few weeks. Approximately 1200 gallons of water were added into a disturbed volume of 96 cubic feet resulting in a release of approximately 80 scf of gas. At one point, 250 gallons of water was sprayed intentionally into a known high-void region in the waste. Noticeably more gas was released during this activity. The spray device deployment supports the theory that it is unlikely that local dissolution can lead to gas releases in hazardous concentrations. It also showed that it would likely be difficult to use dissolution (rather than the planned waste transfer) as an immediate mitigation measure. (III-A.2)

C. Tank Farms Lightning Controls: A large lightning storm passed through the Hanford Site on August 5 resulting in several ground lightning strikes near the Tank Farms. As this was a potentially significant challenge to the lightning protection system, I suggested to DOE and contractor management that the performance of the Tank Farms' lightning protection systems be evaluated. Evidence of effective protection and previously unknown vulnerabilities should be examined. (I-A.2)

D. Spent Nuclear Fuel Project: DOE has reached an agreement with EPA to extend the milestone associated with construction of the Cask Loadout System to February 2000. This milestone is consistent with the recently adopted strategy of controlling crane lifts and minimizing redesign of the Immersion Pail Support Structure. (I-A.3)

cc: Board members