

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 17, 2003

TO: K. Fortenberry, Technical Director
FROM: D. Grover and M. Sautman, Hanford Site Representatives
SUBJ: Activity Report for the Week Ending October 17, 2003

Tank Farms: While SY-101 is believed to have enough retained gas to make the headspace flammable if it was all released, the latest tank conditions are expected to preclude the possibility of a buoyant displacement gas release event (BDGRE). Parameters such as specific gravity ($1.28 < 1.4$), the buoyancy ratio ($0.56 < 1$), and the Estey criteria ($126 < 150$ inches), are all within what empirical relations predict are safe. Estimates of the retained gas volume (3220 ft^3) are consistent when using different methods and are consistent with estimates using previous transfer data. CH2M Hill Hanford Group (CHG) suspects that the reason the gas inventory was underestimated was that the assumption that all of the existing retained gas was released during the mixer pump runs a few years ago was incorrect. This could have some impacts on Bechtel National's efforts to demonstrate gas releases when using pulse jet mixers at the Waste Treatment Plant. CHG is conducting a number of follow-on evaluations to better understand the implications of this event on other tanks and planned waste transfers. The staff intends to follow these efforts since CHG is also considering increasing the specific gravity to 1.47 or even higher.

The Site Rep met with CHG to discuss staff concerns with their ongoing Management Verification Assessment since a large number of items were not complete and the final Safety Evaluation Report had not been issued when this review commenced. As a result, CHG will now perform a follow-on review to verify that the outstanding open items have been completed prior to officially implementing their new Documented Safety Analysis report. (I-C)

Spent Nuclear Fuel Project (SNFP): The project has submitted the revised Authorization Bases (AB) documentation for the sludge retrieval at the K-East Basins, transportation, and storage at T Plant. Review of this documentation has identified the Limiting Conditions for Operations and their associated basis for both K Basins and T Plant do not appear to give sufficient information to ensure the operability of the purge systems. This was also identified as requiring modification by DOE-Richland in their safety evaluation report for the K Basins AB. The staff is continuing to review the AB documentation and implementation of controls. (I-C)

Following the recent releases of sludge into the K-West Basin resulting from stuck fuel, which in one case led the SNFP to perform washing of fuel baskets to remove excess sludge, the Site Rep evaluated the implementation of the fuel cleaning Technical Safety Requirements Administrative Controls. It was determined that the sludge settling into baskets and subsequent washing had not been evaluated using the Unreviewed Safety Question process to ensure that the condition was bounded by the AB assumptions. In addition, discussions with SNFP personnel identified that requirements for fuel inspection may not be adequately understood and implemented. These concerns have been communicated to DOE. (III-A)

cc: Board members