

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 19, 2008

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending December 19, 2008

Staff members J. Galaska, E. Rozek, and S. Stokes were on-site to observe meetings between the Waste Treatment Plant (WTP) contractor, Office of River Protection (ORP), and their consultants on safety basis changes to comply with DOE Standard 1066. In addition, the staff conducted reviews of the safety basis, design, and construction of WTP.

Waste Treatment Plant: ORP requested the contractor to evaluate the estimated radiological material at risk (MAR) used to perform accident analyses, determine required shielding, and design equipment (see Activity Report 10/31/08). The evaluation will consider the latest tank waste characterization data, additional radiological decay due to the delayed start of the facility, and revised process flow data. ORP asked for a report by December 31, 2008, that provides: new estimated radionuclide concentrations and a comparison with current design values; an approach for updating calculations and a discussion of uncertainties, risks, and mitigation approaches; areas of potential benefit; a process to implement the results; and a cost and schedule to update calculations. ORP also expressed its expectation that Washington Safety Management Solution, LLC, and the Hanford Tank Operations Contractor will be tasked to assist in this effort. ORP stated it expects the evaluation will result in lower MAR and a significant reduction of the number of safety-related controls at the Pretreatment, High Level Waste, and Analytical Laboratory facilities.

Tank Farms: ORP closed the last of the S-102 Spill Type A Investigation Report corrective actions. An effectiveness review for the corrective action will be completed within six months.

A spill of approximately one quart of potentially contaminated water occurred during testing of a tank farms ventilation system. Workers were installing equipment to measure the ventilation flow from the AY and AZ tank farms when water unexpectedly drained from an instrument port. The liquid was downstream of the HEPA filters, but workers conservatively treated the spill as if it was tank waste and entered the Abnormal Operating Procedure (AOP). There was no evidence of personnel exposure or release to the environment. Key steps in the AOP, including calling 911, were implemented. ORP reported deficiencies with the implementation of the recovery actions, such as sending emergency responders into the area without adequate personal protective equipment and exiting the AOP before all necessary conditions were met. The source of the liquid has not been identified but is believed to be condensation in the exhaust stack due to very cold ambient temperatures. The contractor stated that the preliminary indications are the filters were not wetted, and the investigation of the cause of the water accumulation is continuing.

K Basin Closure: Richland Operations Office (RL) issued a Safety Evaluation Report (SER) to resolve the Potential Inadequacy in the Safety Analysis associated with the size and shape of the hydrogen bubble that could be released from the sludge stored in the engineered containers (see Activity Report 10/3/08). In addition to the new contractor-proposed control to monitor changes of the sludge level that would be indicative of a large hydrogen bubble, RL requires the sludge to be sparged with water before fluidizing the sludge.