

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 30, 2010

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending December 31, 2010

Plutonium Finishing Plant: The contractor concluded that the criticality issue in Building 291-Z is a criticality infraction but not a violation because they still had two unlikely and independent contingencies (see Activity Report 12/24/10). They are continuing to perform more detailed and accurate assays of the pipes; preliminary indications are the quantity of holdup in the pipes is significantly less than that assumed two weeks ago. If these values are confirmed, the contractor will evaluate if the criticality infraction can be downgraded to a criticality non-conformance, the lowest non-conforming condition in the contractor's criticality safety program.

The contractor held a critique for work that resulted in 3,000 dpm alpha skin contamination on the forearm of a worker; the contamination was successfully removed. The worker was wearing two sets of personal protective equipment (PPE) in a high contamination area and was trying to cut the drain pipe out of a sink that was below a hood. The apparent cause was not taping the second layer of surgical gloves to the outer layer of PPE. Other workers noted that although this is a good practice, it is not procedurally required.

Tank Farms: Another contamination event occurred in C Tank Farm this week. A worker wearing a full set of PPE had a speck of contamination, 25,000 dpm beta-gamma, on his personal shirt but none on his PPE. The contamination was successfully removed with tape. The gamma signature of the waste was similar to the contamination found on workers last week. Thorough surveys in the change trailer last week as well as this week failed to identify any further contamination, and the cause for this contamination event is unknown.

Summary of 2010 Significant Activities at Hanford (Part 1):

- The Waste Treatment Plant (WTP) contractor reported the project passed the midpoint, and at the end of the year, noted the design, procurement, and construction were, respectively, 83, 74, and 58 percent complete. The installed commodities, at the end of November, include: 206,000 cubic yards of concrete; 17,066 tons of structural steel; 219,450 linear feet of piping; and 280,930 linear feet of cable and wire.
- In the WTP Pretreatment Facility, the contractor installed the 30-ton capacity bridge crane and the first of two large shield doors for the hot cell, and began installing the fifth elevation of concrete walls (98-foot level). The second large shield door should be installed soon.
- In the WTP High Level Waste Vitrification Facility, the contractor installed the four large shield doors for the melters.
- In the WTP Low Activity Waste Vitrification Facility, the contractor began installing cooling panels that will surround the melters. A total of 60 panels, with a total of 2,900 square feet, should be installed by early 2011.
- The Tank Operations Contractor (TOC) initiated major programs to improve the conduct of operations, conduct of radiological controls, and work planning.
- The TOC reported they reduced the number of nuisance alarms from 1306 to 234 and the number of "red circled" out-of specification items on logs from 82 to 6.
- The TOC successfully installed a large riser in single-shell tank C-107 so they can install a system they believe should efficiently retrieve waste from the tank.