

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 7, 2013

TO: S. A. Stokes, Acting Technical Director
FROM: D. Gutowski and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending June 7, 2013

Tank Farms. The site rep observed the contractor cut a 55” diameter hole in the dome of single-shell tank C-105 (see Activity Report 5/31/2013). The work proceeded successfully and dose rates during the activity were significantly lower than assumed in the work planning process. Following the cut, the contractor needed to initiate the contingency plan for a stuck drill. The contractor later installed a new riser in the hole. This evolution demonstrated the importance of cold testing prior to initiating radiological operations.

The contractor installed real time flow instrumentation into double-shell tank AZ-102 (see Activity Report 5/31/2013). The two types of instruments now installed in both AZ-102 and SY-102 will be evaluated for 90 days to support selection of an instrument to deploy for safety-significant airflow measurement in all double-shell tanks.

Site Infrastructure. One of the two 24-inch raw water lines that supply the 200 West Area ruptured, and approximately 500,000 gallons of water leaked before this section of pipe was isolated. One of the purposes of the system is to provide fire suppression water for nuclear facilities. The line is part of the original site infrastructure (1944), and this is the third leak in the line in just over a year. Workers will inspect several hundred feet of piping upstream and downstream of the rupture for evidence of additional problems.

Waste Treatment Plant (WTP). The Office of River Protection (ORP) completed a surveillance of the hydrogen mitigation system for the cesium ion exchange process in the Pretreatment Facility and concluded that the system does not meet its safety function. The report from ORP noted: 1) the current design does not ensure that flammable gas concentrations will remain below lower flammability limits when an ion exchange column is in standby or no-flow conditions, 2) released explosive gases could go to unanticipated locations, 3) flammable gas can be trapped by the upper and lower resin bed retention screens, and 4) the valves and level sensors used to control the flammable gas levels have not been tested in a prototypical manner.

Plutonium Finishing Plant (PFP). Last Friday, the contractor completed repairs to the brake on the bridge crane in the Plutonium Reclamation Facility (see Activity Report 5/24/2013). However, it failed again this week during load testing.

100K West Basin. The contractor concluded that the Potential Inadequacy in the Safety Analysis associated with new information on the shear strength of the containerized sludge is an unreviewed safety question (see Activity Report 5/31/2013).

Solid Waste Operations Complex (SWOC). The site rep walked down an outside waste staging area at SWOC with a facility representative and a contractor manager. This area has been used for staging large waste boxes retrieved from burial grounds starting in 2008 and may be used to stage waste boxes from PFP in the future. The waste boxes are generally covered with felt-backed vinyl to prevent degradation, keep them dry, and prevent the spread of contamination. The one box that is believed to be leaking has a means to collect leakage.