

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 31, 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 May 31, 2013

Waste Treatment Plant. The Office of River Protection (ORP) briefed contractor management on the findings from their quality assurance audit (see Activity Report 5/10/2013). ORP presented twelve draft findings and concluded that the implementation of the contractor's corrective action program was inadequate in several areas.

100K West Basin. The contractor concluded that new information on the shear strength of the containerized sludge (see Activity Report 5/24/2013) as well as the use of incorrect dimensions of the sludge containers constituted a PISA. Both of these factors increase the probability that a large bubble of hydrogen gas can accumulate in the sludge and create a hazard for workers over the sludge containers. The contractor noted they have not observed growth in the sludge height since the containers were filled, which would happen if gas accumulated in the sludge. They concluded that the frequency of a large hydrogen bubble release and deflagration increased.

Tank Farms. Contractor management approved an updated work package for the C-105 dome cut (see Activity Report 5/24/2013) which included a contingency plan for a stuck drill bit as well as an improved industrial hygiene plan.

There was a leak from the AN-106 supernate pump assembly into the pump pit during C-107 to AN-106 retrieval. This pump was replaced earlier this year (see Activity Report 2/8/2013). The contractor is still evaluating possible repair options.

The contractor installed equipment to measure real time ventilation flow in double-shell tank SY-102. This is the first of two pilot installations to evaluate the performance of measurement equipment that will be installed in all double-shell tank farms as part of the response to Recommendation 2012-2, *Hanford Tank Farms Flammable Gas Safety Strategy*.

The contractor met with personnel from PNNL to review progress in laboratory experiments and modeling that are intended to provide a technical basis to resolve safety concerns with gas retention and release in deep sludge layers (see Activity Report 3/29/2013).

Waste Encapsulation and Storage Facility. The site rep observed the contractor perform the monthly functional test of the area radiation monitors (ARMs) in a methodical and controlled manner. After last month's test, the contractor combined two separate procedures, one for the safety-significant and one for the general service ARMs into a consolidated procedure. The instrument technician identified a number of minor errors in the combined procedure that he ensured were corrected before starting the test.

Plutonium Finishing Plant. The contractor disconnected two gloveboxes from a process line and removed two different boxes from the facility. These were the first gloveboxes disconnected or removed in months (see Activity Reports 12/7/2012 and 1/4/2013). The site rep identified errors in the repetitive-use procedure use for removing gloveboxes from the facility, which was being used for the first time. The contractor is correcting the work package.