

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 4, 2022

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** B. Caleca, P. Fox, and P. Meyer, Hanford Resident Inspectors  
**SUBJECT:** Hanford Activity Report for the Week Ending February 4, 2022

**Tank Farms.** Contractor personnel held a control decision meeting to discuss proposed safety-related controls for performing waste disturbing activities, such as large water additions and modified sluicing, in waste group B single shell tanks (SSTs). Waste group B tanks are those tanks that retain a large enough inventory of flammable gases in the settled solids matrix to exceed the tank atmosphere lower flammability limit if the gas is released into the tank headspace. Such a gas release event (GRE) could be induced by waste disturbing activities and result in a flammable gas deflagration or detonation hazard. The current Documented Safety Analysis (DSA) prevents this event by precluding the performance of waste disturbing activities in those SSTs. However, the contractor is scheduled to retrieve waste from waste group B tanks in both A and AX tank farms. Consequently, they must amend the DSA to allow performance of the work. The team identified a set of process controls to mitigate the hazard and support retrieval. It was also their conclusion that the use of engineered controls is not practical, although ventilation was identified as an important contributor to defense-in-depth.

**T Plant:** The resident inspectors observed a walkdown of the Perma-Con<sup>®</sup> enclosures located on the T Plant canyon deck. The enclosures were previously used to repackage transuranic waste during the site's last major waste characterization and repackaging campaign but are currently unused. Waste group personnel had requested the walkdown with plant personnel to discuss facility capabilities and the challenges of performing waste operations at T Plant. The activity supports development of options for future resumption of transuranic waste operations. After the walkdown and per request, the resident inspectors provided existing Board technical reports on transuranic waste processing to the contractor team to support their evaluation.

**Inner Area End States:** The resident inspectors observed a coached field drill. The drill was similar to a graded drill held at the same facility last month. The contractor's emergency preparedness manager and coaches were proactive in providing guidance and soliciting feedback from all players. Additionally, fire department personnel demonstrated the mechanics of loading injured personnel into an ambulance and doffing of firefighter personal protective equipment. Many participants noted that the activities were helpful and a substantial improvement on prior drills. The resident inspectors note that the focus on field team training is a positive development and helps address deficiencies resulting from the loss of experienced personnel.

**222S Laboratory:** A resident inspector observed a Plant Review Committee (PRC) meeting which was held to evaluate whether the mineral oil leak in the 11A hot cell windows constituted a Potential Inadequacy of the Safety Analysis (PISA) (see 1/21/22 report). Because the bounding fire scenario assumes that all facility contents are released during a fire, the PRC concluded that a PISA does not exist. However, to reduce the hazard, contractor management plans to drain the mineral oil from the windows. They also intend to eventually switch to a nitrogen-inerted window system.