

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 15, 2023

TO: Katherine R. Herrera, Acting Technical Director
FROM: B. Caleca, P. Fox, N. Huntington, and P. Meyer, Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending December 15, 2023

Tank Side Cesium Removal (TSCR): Tank farms operating contractor (TOC) personnel discovered two instances of waste leaking in small quantities from the TSCR process while recovering from the severe rainfall event last week (see 12/8/2023 report). One of the leaks is dried material on a threaded connection in the TSCR enclosure, while the other is a crust forming at the mating surface between the TSCR feed delivery pump and the adapter plate it rests on. Neither leak appears to have resulted from a pressurized release or involves a significant volume of material. The TSCR process remains shut down while TOC personnel address the leaks.

Waste Treatment Plant (WTP): ORP convened its senior review board (SRB) to review and approve the proposed safety design strategy (SDS) for the WTP High Level Waste (HLW) facility. This SDS incorporates the feedback from the WTP HLW firm-the-foundation team recommendations for a direct-feed HLW design strategy as well as feedback from the DOE-EM chief of nuclear safety for a graded approach to incorporate new DOE and industry design and safety standards. The SRB voted to approve the SDS with conditions of approval addressing interfaces with the laboratory facility and the preliminary documented safety analysis.

Solid Waste Operations Complex (SWOC): While performing an extent of condition review associated with the Potential Inadequacy in the Safety Analysis concerning pool fuel fires affecting multiple facility zones in waste storage buildings (see 10/20/2023 report), it was determined that a similar scenario exists for fuel pool fires at the outside storage areas at T Plant. A timely order has been established placing limits on vehicle fuel volume and creation of new waste zones for which the material at risk could exceed currently analyzed limits.

222-S Laboratory: HLMI is performing internal inspections of their general service fire suppression systems that were identified as being delinquent when the SWOC fire suppression system issues were being investigated (see 4/14/2023 report). An emergency impairment was declared, and compensatory measures were established upon discovery of sediment and debris in the branch lines for Riser 2, a wet system. HLMI and HMIS have since performed additional inspections to determine the extent of debris in the branch lines. They are currently planning to flush the fire suppression piping and determine its condition prior to placing it back into service.

Tank Farms: WRPS has been investigating the condition of waste transfer lines since February 2022, when water was unexpectedly found inside an AW farm transfer line encasement and prompted a concern that corrosion might reduce the service life of the piping. The transfer lines are critical to the liquid waste processing mission, which will continue for several decades. This week, WRPS pipe integrity engineers provided an update on their investigation. They observed that conditions found have not alleviated the concerns and are expected to result in potential changes to transfer line management processes. The results of the investigation and any resulting changes to the transfer line inspection and monitoring program will be provided as an input to an upcoming assessment by an Independent Qualified Registered Professional Engineer.