DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 17, 2021

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 December 17, 2021

Tank Side Cesium Removal (TSCR) System: The DOE Energy Systems Acquisition Advisory Board recommended approval of the TSCR CD-4a milestone. Completion of the milestone indicates that the system is ready for process operations. The DOE Deputy Secretary subsequently approved startup of the TSCR system. DOE Hanford is working with the contractor to establish a January date to start pre-processing of staged, low-activity, waste.

Waste Treatment and Immobilization Plant (WTP): DOE Hanford Management met with site contractors to discuss the status of phase two of the Direct Feed, Low-Activity Waste (DFLAW) project. This meeting was held to support DOE Hanford's phase gate decision process. The process is designed to allow holistic evaluation of site-wide readiness to support DFLAW operations. Based on information provided at the meeting, all criteria have been met to support phase gate two. This means that the site is ready to support heat-up of the first Low-Activity Waste facility melter. This gate is important since, once the melter is at operational temperature with a glass pool, it cannot be shutdown. An extended loss of heating would result in a loss of the melter. DOE is now working with the WTP contractor to establish a date to start melter heat-up. Initial heat-up will be performed using temporarily installed startup heaters. Once the melter is at an operational temperature, frit will be added to establish conditions for energizing the permanently installed heater electrodes. The initial heat-up will take several weeks.

Radiochemical Processing Laboratory (RPL): A worker alarmed a personnel contamination monitor after working near the C cell transfer mechanism door of a High-Level Radiochemistry Facility (HLRF) hot cell. Contamination was found on the worker's boots. The area the worker had been in was posted as a radiological buffer area and radiological contamination was not expected. During a fact gathering meeting held after the event, participants noted there was higher than normal traffic in the travel path used by the worker since other workers were concurrently removing remote manipulator arms from another area of HLRF. Participants also noted that painted surfaces around the hot cell could contain fixed contamination that may flake off. However, at the time of the meeting, ongoing surveys had not identified a definitive source for the contamination. Facility management has restricted access to the area until surveys are complete. They will conduct an apparent cause analysis to identify necessary corrective actions.

105-KW Basin: While attempting the retrieval of filter media from the sludge retrieval system sand filter into a sludge transportation and storage container, radiation levels exceeded the allowed limit. Work crews put the system in a safe state, evacuated the area, and made proper notifications. Subsequently, a resident inspector observed an in-progress ALARA review held to collect facts related to the incident. After several failed attempts to suspend and transfer solids from the filter, workers increased the system flow which caused a sudden increase in entrained solids, resulting in radiation levels that were higher than expected. The sudden increase in entrained solids also resulted in a pressure spike, which caused a rupture disc to fail, as designed. The failure resulted in a discharge of some filter media back into the basin. Resident inspectors also performed a walk down of the 105-KW Basin for familiarization and to observe progress on the Vertical Pipe Casing work (see 4/22/21 report).