

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 30, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: B. Caleca and P. Fox, Hanford Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending April 30, 2021

Tank Farms: The Tank Farm Operations Contractor Executive Safety Review Board (ESRB) changed the status of single shell tank 241-B-109 from “sound” to “assumed/active leaker.” This change raises the number of assumed leakers from 57 to 58 tanks, and the number of actively leaking tanks from one to two (T-111 is the other actively leaking tank). An initial drop in liquid level was detected during a quarterly interstitial liquid level (ILL) check in March 2019. However, the level stabilized for the remainder of 2019 before it began dropping again in early 2020. Consequently, the TOC launched their leak assessment in July 2020. The assessment included multiple ILL readings, visual assessments of the surface pool using cameras, liquid level measurements at the central riser, and gamma readings in four surrounding dry wells. Based on the accumulated information, an expert elicitation team determined that there is a very high probability that the tank is actively leaking. Total liquid loss is estimated to be about 3,000 gallons. Since the leak is well below the surface, it does not represent an immediate hazard to the public or workers. However, the long-term impact (two to three decades in the future) to the water table will need to be addressed. DOE is currently operating two groundwater treatment wells in this area to address previously existing subsurface contamination spreads.

Liquid Effluent Retention Facility (LERF): While performing routine weekly surveys in a soil contamination area (SCA) east of LERF basin 44, facility radiological control personnel found a fragment of degraded material along the fence line which had beta gamma contamination that exceeded the limits allowed for the area. An extent of condition walkdown performed the following day by radiological control personnel found additional loose contaminated material. The source of the material has not been identified but appears to be associated with radiological work. The affected area has been up-posted from an SCA to a contamination area and the contractor has sent some of the material to the 222-S laboratory for analysis to obtain information that might help identify its source.

105-KW Basin: A worker alarmed a personnel contamination monitor upon exiting the basin after handling electrical cables to support construction activities associated with the installation of vertical pipe casings; surveys confirmed contamination on one leg of his personal clothing. Contractor management held a critique and determined that the sub-contract construction crew was not aware that contamination could leech from electrical cables like the ones this individual had been handling (see 7/26/2019 report). While contractor personnel believe the cables were the source of the contamination, they were not able to determine the mechanism that transferred contamination through the personal protective clothing (PPE) to the personal clothing. Facility management acknowledged that, although this hazard had been accounted for in other work involving potentially contaminated cables, it had not been identified during the work planning for this activity. The critique also determined that two other workers had been contaminated on their outer PPE while using long reach tools that are often contaminated, partly due to congestion in the work area. In addition, project personnel noted that the anti-contamination dress used may have not been adequate for some of the work conducted, particularly wiping down contaminated cables. Project personnel have suspended the work package and up-posted the area around the cables pending revision of the work instruction to include appropriate additional controls.