

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 25, 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 March 25, 2022

DNFSB Staff Activities: Savannah River Site (SRS) resident inspector L. Lin was onsite for routine oversight support.

Tank Farms: Resident inspectors met with Tank Farms Operations Contractor (TOC) project engineers to discuss recently developed techniques and mechanical designs for improving work efficiency and reducing worker dose. Among the recent innovations presented by the project engineers was equipment that enabled precision placement and alignment of the concrete core drilling equipment and through wall nozzle piping during installation of new transfer lines between the 242-A evaporator and AW Tank Farm; other equipment demonstrated helps limit spalling during core drilling which reduces the need for concrete repair work after completing a core. The use of the equipment significantly reduced installation times for the through wall piping at the evaporator building and can be used for other similar applications. The meeting included a visit to the innovation laboratory where they model equipment prior to production and a walk down of the transfer line installation work site and evaporator building modifications.

The Board's staff met with TOC and DOE nuclear safety personnel to discuss a calculation that updates tank farm boundary distances. The interaction resulted in changes that will improve the description of the methodology and assumptions used for the calculation and adjust some selected boundary locations to improve the technical accuracy of the calculation results.

The TOC emergency preparedness group held its first no notice drill since 2020, simulating a waste tank exceeding 75% of the lower flammability limit before deflagrating. The resident inspector observed that TOC backshift personnel were able to successfully contact on-call emergency response organization personnel to respond to the simulated event.

The resident inspectors observed a pre-job meeting and work evolution to disconnect a Tank Side Cesium Removal process ion exchange column (IXC) and move it to the spent IXC storage pad. The visiting resident inspector noted differences in pre-job practices regarding discussion of tasks and hold points compared to SRS. The resident inspectors shared their observations with DOE field office observers and contractor personnel.

Pacific Northwest National Laboratory, Radiochemical Processing Laboratory: Facility management held a fact gathering meeting to discuss a worker's optically stimulated luminescent dosimeter reading that challenged their assigned administrative control limit. This individual and several other workers are involved in work to refurbish hot cells at the facility; pending further investigation, this activity has been paused. The resident inspectors noted that while dosimetry was discussed in detail, the fact gathering did not discuss the potential issues of radiological work planning, hazard controls, and work execution that contributed to higher-than-expected doses for workers. Facility Management self-identified these weaknesses at the conclusion of the fact gathering and are performing additional work to address the concerns.