

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 2, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: M. Bradisse, B. Caleca and P. Fox, Hanford Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending October 2, 2020

Central Waste Complex (CWC): Last week, the contractor received the results of a nondestructive assay (NDA) performed in July on a large waste box. This waste box contains an over-packed glovebox from the Plutonium Finishing Plant (PFP) that was declared excess and packaged for retrievable storage in 1974. The package has been stored outdoors at CWC since January 2011 after being retrieved from its initial storage location in the burial grounds. The July NDA evolution was meant to determine whether the fissile material inventory of the box met requirements for movement to Perma-Fix Northwest for size reduction and repackaging. The results indicated an inventory nearly a factor of ten higher than the initial NDA data gathered when the waste box was packaged. This amount of fissile material would exceed the allowable inventory for a waste container of this type. The inventory limit protects design basis accident assumptions and is a specific administrative control. The analyzed value also exceeded the maximum upset condition analyzed in the criticality safety evaluation report (CSER) for a single container at CWC. The contractor established controls on the area around the container and prohibited its movement. However, contractor subject matter experts suspected that the July NDA results were erroneous because of the method and modeling used for the NDA, and because of the presence of an adjacent waste container that may have contributed background radiation during the NDA. Consequently, after developing a recovery plan, the contractor moved the adjacent container and performed a more detailed NDA on the potentially over-massed waste box. The results of the new NDA show a fissile mass that is approximately one-third of the value obtained from the July NDA. This new value is bounded by analysis in the facility CSER. However, the quantity remains above the inventory limit specified in the facility technical safety requirements (TSRs). The contractor has established compensatory controls pending a more complete evaluation of the safety of the situation.

222-S Laboratory: DOE awarded the next 222-S Laboratory contract to Hanford Laboratory Management and Integration, LLC (HLMI). HLMI will be responsible for operating, managing, and maintaining the laboratory complex, as well as providing analytical laboratory services for the Hanford site. This new contract consolidates the current roles of two organizations: Washington River Protection Solutions, the current laboratory operations contractor, and Wastren Advantage, Inc. (WAI), the current laboratory analysis and testing services contractor. DOE also extended the current WAI contract for up to one year, through September 20, 2021, to support contract transition.

Central Plateau Risk Management (CPRM): This week, contractor personnel began installing the equipment necessary to stabilize three underground structures in the vicinity of the PFP footprint that are at an elevated risk of structural collapse (see 9/11/2020 report). The equipment will allow the three structures' void spaces to be filled with low-strength grout to eliminate this hazard while the material at risk awaits retrieval and disposal.