

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 5, 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 August 5, 2022

Waste Treatment Plant: A plug used to close a bubbler opening became hung up on a fixed structural component while being moved to support a test activity for melter #1. The operators lowered the plug, checked for damage, and then resumed work without reporting the unplanned contact to the control room. Upon placement of the plug into the melter opening, the operators encountered difficulty disengaging the positive lock pin used to attach the plug to the crane rigging gear. Engineers called in to evaluate the pin checked the load history and determined the pin, a shackle, a wire rope, and the attachment lug on the plug had been overstressed when the plug contacted the structural component. Crane limits were not exceeded. A critique determined factors influencing the event included positioning of the spotter, location of the crane controls, and failure of the lift crew to recognize an overload situation. The overstressed equipment was removed from service and the plug will remain in place pending an evaluation of its condition.

Solid Waste Operations Complex (SWOC): A resident inspector observed the final oral examination of a facility representative candidate. The board voted to pass the candidate after a rigorous examination. This individual will be assigned to cover SWOC facilities.

The contractor held an emergency preparedness drill to evaluate the performance of the Facility Emergency Response Organization (FERO) at the Central Waste Complex. The scenario involved the crash of an aircraft into the outdoor storage area, impacting waste containers. The event scene was simulated indoors due to expected high temperatures. A resident inspector observed the performance of the FERO from the Incident Command Post. The Building Emergency Director demonstrated excellent command and control, developed appropriate protective actions, gained control over the emergency, and properly classified the event. During the drill a failure to properly establish a bridge with the Emergency Operation Center was identified and corrected, with follow-up actions being planned to address this weakness.

Tank Side Cesium Removal (TSCR): Management held a Plant Review Committee (PRC) meeting to review an unreviewed safety question determination (USQD) on errors in a technical evaluation supporting a TSCR process technical safety requirement (TSR) for flammable gas controls (See 7/29/22 report). The review determined that the technical evaluation did not identify two valves as part of system boundaries requiring verification or double isolation. This increased the probability that a TSR required blowdown would fail, which increased the risk of flammable gas accidents in one of the ion exchange columns and the treated waste delay tank (TWDT). The PRC voted to approve the USQD. Engineers have revised the technical evaluation, the control signal sequencing for TWDT isolation, and the TSR implementing procedures. An operability assessment of the pneumatically operated valve with a misaligned visual indicator was released to support TSR blowdowns of the enclosure, as it cannot be repaired or replaced in the current TSCR configuration prior to a successful blowdown. The assessment determined that the valve can be used for the next blowdown if it passes leak and blowdown checks, and that the visual indication does not change alignment further.