

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 12, 2023

TO: Christopher J. Roscetti, Technical Director
FROM: B. Caleca, P. Fox, N. Huntington, and P. Meyer, Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending May 12, 2023

DNFSB Staff Activity: Q. Boney visited the Hanford Site to gain an understanding of site facilities and related activities, and to participate in resident inspector oversight activities.

Solids Waste Operations Complex (SWOC): Since the discovery of sediment and corrosion products in sprinkler system branch lines earlier this year (see 1/20/23 report) and subsequent determination of system inoperability (see 2/03/2023 report), contractor personnel have sought to determine the factors that lead to the condition. This week, the contractor determined that the failure to perform required 5-year internal inspections represented a programmatic breakdown of one aspect of the fire protection safety management program (SMP). Although the fire protection SMP is credited as a technical safety requirement (TSR) administrative control, the contractor does not consider this failure of the SMP to be a TSR violation. Rather, they consider it to be a violation of other hazardous controls as defined in the SWOC TSR document.

Waste Treatment Plant: BNI engineers finalized an informal engineering study that they performed to understand the potential consequences of the February carbon adsorber bed over-pressurization event (see 2/24 and 3/24/2023 reports). Their study evaluated two conditions using methods defined under the ASME Boiler and Pressure Vessel Code. The first condition analyzed potential consequences at 5-psig, which is the estimated maximum pressure during the event. That pressure is slightly above the positive 4-psig design pressure for the unit. The second condition evaluated consequences at 16.1-psig, which is considered the bounding pressure for the event. The bounding pressure evaluation was used to identify potential failure points. The potential failure points were then visually inspected, and no damage was found (see 3/24/2023 report). In the report, they concluded that the design has substantial positive pressure margin. Based on the evaluation and the results of the visual inspection, they determined the carbon bed vessel was not damaged.

The resident inspectors observed parts of an equipment demonstration that Low-Activity Waste (LAW) Facility personnel performed to inform the development of processes and procedures they will use to replace consumable components in a hot melter. The resident inspectors noted significant improvements in the procedures that support this work, compared to previous observations. They further noted that the field work supervisor performed an excellent pre-job brief and that the work team was knowledgeable and well-prepared for the activity. Observed work was performed methodically and appropriately controlled. Lastly, the resident inspectors observed that DOE oversight personnel are providing substantial oversight of this activity.

A resident inspector observed a tabletop review of the procedure that LAW Facility personnel will use to evaluate the performance of the automatic sampling system used to support waste receipt and preparation, followed by subsequent feed to a melter. The overall execution of the tabletop review was effective, and the event was well supported by knowledgeable operations and engineering personnel, resulting in the identification of necessary changes to the procedure.