

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 29, 2023

TO: Timothy J. Dwyer, Acting Technical Director
FROM: A. Holloway, C. Stott, and C. Berg (acting), Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending September 29, 2023

Staff Activity: A. Holloway traveled to Washington, D.C. for training. J. Anderson joined the resident inspectors in attending the first week of the Approved Equipment Program Volume I Nuclear Explosive Safety Master Study (see 9/1/23 report).

Conduct of Operations: Late last week, CNS production technicians used a similar, but incorrect, 35-account polymer material while building a nuclear explosive-like assembly and subsequently recognized the mistake upon resuming operations during the next shift. At the investigation, CNS participants identified that the technicians had not followed procedural guidance and did not verify the 35-account number on the material prior to commencing operations. Of note, CNS personnel also stated that the incorrect 35-account material is not used for any operations on this nuclear explosive-like assembly. As corrective actions for the event, CNS plans to provide a verbatim compliance briefing to all technicians on this weapon program, as well as develop a path forward with the design agency to disposition the unit.

Facility Appurtenances: Last week, CNS facility engineers found certain conduit supports installed in a ramp outside nuclear explosive bays that were not installed correctly per design documents. CNS facility engineering previously approved a design change package that limited the amount of weight each conduit support could hold in addition to specifying the placement of the supported conduit. Due to the lack of analysis to demonstrate the installed conduit supports would remain in place following a design basis seismic event, CNS declared a safety basis noncompliance and erected barriers to prevent material moves in the affected ramp. CNS facility engineering subsequently determined the installed conduit supports were acceptable for continued use and completed an extent of condition for other locations affected by the same design change and found no other issues.

Facility Crane Assembly: During semi-annual preventive maintenance in a nuclear explosive cell, CNS facility engineering discovered a crack in an overhead bridge crane end stop, which ensures hoists do not travel past the end of the crane rail. As the end stop has not been evaluated to perform its safety function in this condition, CNS declared a safety basis noncompliance and locked out both hoists to prevent use until issue disposition. During the investigation, CNS discussed that hoists were installed on existing crane rails and end stops in 2021. A previous contractor had removed the original hoists in 1993. CNS personnel discussed the fact that the crack in the end stop appears to be from original construction, likely due to thermal stresses from welding the stop to the crane rail. This assertion is supported by visual examination of the material within the crack, which appears to have aged similarly to the surrounding metal. For corrective actions, CNS will update calculations to ensure the end stop can perform its safety function in this degraded condition before resuming hoist operations. Also, during the investigation, the resident inspectors noted that prior inspections of the end stop, since 2021, did not identify this degraded condition. CNS responded that they plan to update associated procedures to better clarify inspection locations and types of degradation.