

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 18, 2018

TO: Steven A. Stokes, Technical Director
FROM: Ramsey P. Arnold and Zachery S. Beauvais, Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending May 18, 2018

DNFSB Staff Activity: D. Andersen and T. Hunt observed and evaluated the first week of the bays and cells nuclear explosive safety master study. As part of this activity, the Board's staff observed maintenance work in nuclear explosive bays and cells. While onsite, the Board's staff also observed CNS structural engineers continue their annual inspections of Zone 4 storage magazines (see 5/4/18 report).

Vacuum Chamber: During the pre-shift setup, production technicians (PT) identified that the vacuum chambers in a nuclear explosive bay had an expired category 2 electrical equipment sticker. Category 2 electrical equipment is not intended for electrical connection with a nuclear explosive but is analyzed to safely make mechanical connection with a unit. Maintenance personnel apply the sticker following the successful completion of an annual inspection of the door and gasket of the vacuum chamber to ensure a minimum gap exists. The inspection verifies that the vacuum chamber is electrically isolated during normal and credible abnormal conditions, e.g., lightning strikes. The vacuum chamber stickers expired April 21, but were not identified until May 12, 2018. During the expired period, multiple units were processed in the vacuum chamber. Prior to processing each unit, technicians completed a setup step in the respective operating procedure to verify that the vacuum chamber sticker was current. Once discovered, the vacuum chambers were tagged out of service and all other category 2 equipment in the bay was validated to be current. Additionally, CNS facility representatives and maintenance personnel investigated whether the annual inspection had been scheduled appropriately. The facility representatives had requested that maintenance personnel perform the annual inspection along with the quarterly inspection, however, maintenance only executed the quarterly inspection. As a result, the facility representatives assumed the annual electrical isolation verification was complete and incorrectly marked it as such in the facility tracking tool. Maintenance and facility representative personnel have updated how the annual electrical surveillance is tracked. The annual inspection was subsequently completed and the vacuum chamber has been returned to service. Facility operations personnel plan to conduct an extent of condition review to determine if there are other pieces of fixed electrical equipment that have similar problems.

Fire Detection and Suppression Control System: During completion of a fire protection system preventive maintenance activity, electricians received a voltage reading below the minimum acceptable level, on one set of battery banks. The battery banks serve as the secondary power source for the fire detection and suppression control system, and sufficient load voltage is required for system operability. Based on the results of the test, the deluge fire suppression system in the building was initially declared inoperable. Actions to verify the absence of combustible materials in the facility, as required by the limiting conditions of operability, had already been completed before the preventive maintenance was performed. CNS engineering is developing an operability evaluation of the system in its degraded state. CNS did not have replacement batteries available onsite. Operations remain paused in the affected cells.