DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 12, 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 April 13, 2018

Special Tooling: Last week, production technicians (PT) installed a new copy of a vacuum fixture on a unit, per a temporary procedure developed to address a vacuum leak on a previously installed copy of the tool (see 3/30/18 report). The tool was unable to hold vacuum upon installation, prompting the PTs to pause operations. Process engineering developed a new temporary procedure directing PTs to adjust the orientation of the tooling and components using plastic spatulas and then complete the operations with the previously installed vacuum fixture. The new procedure was completed successfully. The documented safety analysis requires protective floor coverings—a foam mat—to be in place during uncased conventional high explosive operations. The protective floor covering is credited as a safety class design feature, with an associated in-service inspection (ISI) to replace it annually. While operations were paused in the facility, the floor covering reached its ISI due date. Using their non-conformance process, process engineering determined a mechanism to allow the mat to enter a grace period, as allowed by the DSA. This is not typically performed for non-facility level controls.

Electrical Testers: Upon reexamining the design of the optical interface and driver module that supports an arming, fuzing and firing tester, tester engineering calculated that the module's center of gravity may be higher than previously assumed. The new information suggests that topple hazards from a seismic event or a human impact may not be adequately controlled. Safety analysis engineering processed this information and determined it represented a potential inadequacy of the safety analysis (PISA), as the module and tester have a previously identified safety function to not topple. Following the PISA declaration, affected operations were paused, pending the implementation of operational restrictions to require a standoff distance between the module and nuclear explosives. Implementation of the operational restrictions required lengthening the associated cable, so that the standoff distance could be achieved. CNS released the pause following revisions to the operating procedure and release of the lengthened cable. Other electrical testers with similar configurations are known to have a center of gravity higher than recommended by the design guide; however, in each of these cases CNS considers topple hazards to be adequately addressed by other means.

Standing Orders: CNS has approximately 40 active Pantex-specific standing orders, some of which date to 2013. The CNS enterprise procedure on standing orders requires that they have a limited duration of 180 days, and that if they cannot be archived after 180 days, they be revised and can be extended for an additional 180 days with an included explanation of why the standing order actions could not be implemented at that time. If the standing order must be extended past 360 days, additional management approval is required. While many of the standing orders relate to administrative processes, a subset of the active standing orders direct actions relate to the implementation of safety controls. Additionally, in certain instances, standing orders are not being utilized in a timely manner to implement operational restrictions with the appropriate level of rigor (see 12/21/17 report). The resident inspectors have shared these observations with the NPO and CNS management teams. CNS is considering how best to address the observations.