

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 4, 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 4, 2018

**Operational Restrictions:** Following the declaration of a potential inadequacy of the safety analysis related to the use of protective covers to control mechanical impacts during bench-top operations with certain weapon components, subsequently determined to represent a positive unreviewed safety question, CNS identified the need for operational restrictions (see 3/30/18 report). CNS engineering specified an operational restriction requiring that a “shorting plug... shall be secured” to the sensitive components during certain benchtop operations. While preparing a safety basis change package to formalize the restrictions into controls, safety analysis engineering determined that shorting plugs, as specified in the operational restriction, would not adequately protect against mechanical impacts. Rather, protective covers, a separate control, would be required but were not specified or implemented. This represents a violation of the technical safety requirements (TSR). In response to the discovery, CNS mission engineering has committed to develop a formal process on how to implement and verify compensatory measures. Additionally, CNS readiness assurance has kicked off an assessment of the implementation of all active operational restrictions. This is the second, recent TSR violation related to implementation of operational restrictions (see 12/21/17 report).

**Construction:** While excavating an area outside of a nuclear facility with a hydro-vacuum, a subcontractor uncovered buried legacy cables and energized electrical conduits not shown on the excavation permit. The subcontractor paused the work upon discovery, making the area safe, and did not impact the conduits. Although utilities and electrical safety personnel were unable to initially identify the conduits, upon further investigation, the system engineer identified them as fire protection alarm signal lines. CNS has paused all excavation work, excluding those that only utilize low-pressure hydro-vacuums that have been analyzed to be incapable of cutting into a conduit, until the excavation permits have been reviewed to confirm that all available drawings fully identify conduits. During the critique, preliminary gaps were discussed including weaknesses in the configuration management and availability of all relevant drawings during the development of excavation permits. In this case, the facility drawings that showed the conduits were not reviewed during the excavation permit development. CNS is convening further causal analysis and corrective action development meetings.

**Storage Magazines:** The resident inspectors observed structural engineers perform periodic inspections of nuclear material and nuclear explosive storage magazines in Zone 4. The inspection is driven by a safety basis requirement to visually inspect magazines, access denial barriers, soil overburden, and ceiling mounted appurtenances on an annual basis. Additionally, the structural engineers completed inspections to support an extent of condition review of overhead items secured by plastic cable ties (see 3/2/18 report). During the inspection, the structural engineers and the resident inspectors observed the condition of known cracks in external walls, missing or degraded bumper pads for access denial barriers, and delamination of steel on facility doors. The structural engineers will review the observations against prior recorded conditions, and determine the adequacy of the structures. Based on initial observations, none of the observed conditions will prevent the structures from performing their safety function.