**DEFENSE NUCLEAR FACILITIES SAFETY BOARD**

May 24, 2019

**TO:** Christopher J. Roscetti, Technical Director
**FROM:** Zachery S. Beauvais and Miranda McCoy, Resident Inspectors
**SUBJECT:** Pantex Plant Activity Report for Week Ending May 24, 2019

**Electrical Testers:** During training, a production technician noticed that a poor connection between two components in a test cable allowed for rotation of the test cable and subsequent damage to the detonator cable assembly (DCA) on an inert trainer unit. The event took place in the weapons training bay, and no nuclear explosives were present in the vicinity of the event. CNS management paused use of the test cable in nuclear explosive operations following the event, and production tooling removed all copies of the test cable from operational facilities. In investigating the event, Pantex engineering identified that the test cable rotated due to loose set screws between the two components in the test cable buildup. These set screws were required to be present per the design agency's specifications, but the test cable design did not specify torque values or the use of adhesives or locking wires to ensure the set screws remained torqued and in place. Pantex engineering is in the process of implementing an engineered solution to preclude rotation of the test cable and preclude damage to the DCA during operations using the test cable. The lead CNS welding engineer, in conjunction with the design agency, designed a modification to the test cable that implements tack welds between the parts that rotated during the event, securing them together. Damage to the DCA during use of the test cable currently is not an analyzed event in the associated hazard analysis.

**Nuclear Explosive Operations:** CNS conducted a fact finding regarding nuclear explosive operations with a unit that has a DCA extending outside the unit three inches less than expected (see 5/3/19 report). The fact finding determined that placement of the unit into a transportation cart and two onsite moves should not have occurred given its potential state, and that Pantex personnel believed the placement and moves to be acceptable per documentation provided by the design agency. In an instruction released to CNS, the design agency conservatively assumed that the DCA was damaged, a state that is not analyzed in the associated hazard analysis and should have prevented the placement and moves from occurring. CNS safety analysis engineering (SAE), CNS nuclear explosive safety and design agency personnel reviewed the temporary procedure directing initial transportation activities, but did not identify this issue. SAE noted the issue during their review of a subsequent temporary procedure for disassembly. At the time of the fact finding, Pantex personnel had no additional knowledge regarding the state of the unit or why the DCA was extending three inches less than expected from the unit. The unit remains segregated in a cell while CNS and the design agency develop a process to address the unit.

**Special Tooling:** CNS management lifted all operational pauses resulting from the weight discrepancies for carts and other mobile tooling (see 5/3/19 and 5/17/19 reports) that resulted in declarations of two potential inadequacies of the safety analysis. Prior to lifting the operational pauses, CNS engineering implemented new cart design revisions that modified the carts to resolve the weight discrepancies. The design changes included adding a weighted plate to one cart to preclude topple hazards, removing shelves from one cart, and pinning the cart doors shut to prevent the placement of additional items into the cart. Two operational restrictions were implemented this week regarding the placement of carts relative to specific assembly stands and the design criteria of these assembly stands.