

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 15, 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 15, 2023

**Staff Activity:** D. Andersen, J. Anderson, R. Jackson, Y. Li, and the resident inspectors conducted an onsite review of recent nuclear explosive cell modernization activities. The staff discussed lines of inquiry on commercial grade dedication, quality assurance, configuration management, and design analysis, as well as conducted walkdowns of the affected areas.

**Special Tooling:** This week, CNS initiated a Stop Work Event to preclude use of certain special tooling (i.e., a lifting and rotating fixture) for a weapon program. Production technicians discovered an issue with a copy of the tooling, which was caused by a shear of one of the two rotational lugs. CNS previously discovered other issues with these rotational lugs and, in response, designed a new tooling revision to modify these lugs by increasing the lug shaft diameter as well as the physical coupling between rotation components. CNS only modified a few copies of the affected lifting and rotating fixtures and has continued to use the prior revision without the updated rotation lugs for nuclear explosive operations. As a result of this latest tooling issue, CNS stated that they intend to update the remaining copies of this tooling with parts that they already have in stock.

**Conduct of Operations:** This week, CNS became aware of a nuclear explosive recently assembled at Pantex in which two electrical cables were incorrectly installed. As discussed during the event investigation, production technicians had inadvertently swapped the cables during the installation process. Of note, these similar cables and associated connectors are labeled and color coded. During a quality hold point—in which proper installation of the cables is verified—CNS quality assurance inspection technicians (QAIT) did not catch the discrepancy. To minimize future occurrences, CNS established various corrective actions. First, CNS will brief all production technicians for this weapon program on the occurrence, as well as expectations for attention to detail and interim actions. One such interim action requires the production section manager to verify that proper electrical connections are made during this step in the operating procedure. Second, CNS will brief all QAITS on the event and expectations for conducting visual examinations during quality hold points, including a dual verification of the proper electrical cable connections. Additionally, in the interim, CNS is requiring a product verification supervisor or specialist be present for the quality hold point. These interim actions will expire once CNS adds a *key step identifier* to the procedure associated with the cable installation to ensure QAITS verify that colors match between the cables and connectors.

**Structural:** Resident inspectors and members of the Board's staff conducted facility walkdowns, which included a corridor with a previously identified concrete defect. CNS personnel discovered the defect during a scheduled in-service inspection of the corridor and placed barricades to temporarily prevent material moves near the area of concern. CNS Facility Engineering is assessing cause(s) and affected areas. During initial investigation discussions, CNS has indicated that the defect may have been caused by water intrusion and subsequent concrete delamination.