

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 14, 2023

TO: Timothy J. Dwyer, Acting Technical Director
FROM: C. Stott and C. Berg (acting), Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending July 14, 2023

Special Tooling: Last week, while conducting operations in a Mass Properties facility during the graveyard shift, production technicians installed special tooling incorrectly onto a unit. The two pieces of tooling were properly aligned to each other but were 180 degrees out of alignment with the nuclear explosive. During the following day shift, production technicians discovered the discrepancy at a stopping point in the procedure and notified appropriate personnel who paused subsequent operations. Per the event investigation, the technicians had securely fastened the special tooling to the unit, so the configuration is considered safe and stable.

CNS personnel noted that the procedure—per a critical step—requires technicians to verify both pieces of special tooling are properly oriented with the unit during installation. This is accomplished by aligning physical markings on each component. Consequently, investigation participants acknowledged this event constituted a procedural adherence violation.

In response, CNS executed a nuclear explosive engineering procedure to correct the tooling installation and resumed normal operations. Furthermore, as a corrective action, human factors personnel plan to assess the special tooling to determine if any engineered improvements could be developed to ensure proper alignment during installation.

Facility Appurtenances: Per the Pantex Technical Safety Requirements, appurtenances within nuclear explosive facilities are designed to remain in place during design basis seismic events to prevent impacting a nuclear explosive. Recently, CNS has encountered unsecure appurtenances near the ceilings of various facilities—including missing and loose hoist cover fasteners in one cell (see 7/7/23 report) and loose filter housings on overhead cranes in four bays (see 6/16/23 report)—leading to safety basis non-compliances.

Earlier this year, CNS personnel discovered a hanging pipe clamp in a ramp, which is a structure used for nuclear explosive transportation operations. Personnel at the event investigation established that the clamp loosened due to pipe movement from maintenance activities in a nearby mechanical room. After verifying it did not provide a necessary structural support, site personnel removed this clamp and ensured others in the vicinity were secure. To prevent a similar event, CNS also plans to conduct a causal analysis and evaluate ways to improve post-maintenance verifications prior to resuming transportation activities within ramps.

When a loose appurtenance is discovered, CNS Facility Engineers and other personnel typically assess the equipment configuration and perform an extent of condition review, which could require the use of an elevated work platform. Following these event investigations, NPO and CNS discussed the lack of a formal procedure to govern these activities and ensure certain controls are implemented (e.g., adequate standoff is established between the work platform and material-of-concern, and platform outriggers are secured in place). In response, CNS is developing a work instruction to codify expectations for personnel performing these inspections.