DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 8, 2017

MEMO TO: Steven Stokes, Technical Director
FROM: Ramsey Arnold and Zachery Beauvais, Pantex Plant Resident Inspectors
SUBJECT: Pantex Plant Report for Week Ending December 8, 2017

DNFSB Staff Activity: J. Anderson and M. McCoy observed the kickoff of the nuclear explosive safety (NES) master study on special tooling and containers.

NES: During the course of an ongoing NES study, the NES study group (NESSG) identified a concern with the adequacy of positive measures implemented to interrupt falling technician hazards during nuclear explosive operations with uncased conventional high explosives. Through deliberation, the NESSG concluded that the positive measures were not adequate to preclude all credible impact scenarios that could lead to high order consequences. The NESSG communicated this conclusion to NPO management as an urgent NES concern. In response, CNS has administratively restricted cell operations on this program and is developing process changes to preclude the hazard. The NESSG is developing its final conclusions on the study.

Safety Basis: CNS safety analysis engineers (SAE) continue to evaluate hazard scenarios on one program where hazard scenarios with unscreened weapon responses for high order consequences lack preventive safety class controls (see 11/17/17 report). The NPO approved unreviewed safety question procedure nominally requires new information to be evaluated within three days to determine if it represents a potential inadequacy of the safety analysis (PISA). CNS has notified NPO that they will require additional time to evaluate the impacts of these scenarios. The evaluation of these scenarios is complicated by inconsistencies within the weapon program's hazard analysis report (HAR). For example, one section of the HAR states that a scenario does not screen and does not have credited controls, while separate sections state that controls exist. During a discussion with NPO and the resident inspectors, CNS SAE personnel stated that although the final determination has not been completed, they believe the scenarios are either not credible or adequately controlled. For unscreened high explosive violent reaction consequences, the cell facility structure is available as a mitigative control. However, for multiple scenarios, the only documented controls to prevent inadvertent nuclear detonation (IND) are key elements of safety management programs (SMP), such as procedure adherence and production technician (PT) training. DOE directives require that a specific administrative control, at a minimum, would need to be credited for prevention of an IND. Since 2013, CNS has been implementing a safety basis improvement plan to eliminate the practice of crediting SMP key elements as controls, however, the improvement plan does not identify which programs or scenarios still require this elimination or a timeline to make the updates. Related issues were identified in a July 6, 2010 Board letter. Although CNS identified that a second program potentially has similar issues, CNS has not fully evaluated this.

Special Tooling: PTs paused operations in a nuclear explosive bay when a workstand unexpectedly allowed free rotation of a unit. Engineering and CNS NES personnel directed the PTs to manually engage the anti-rotation features of the workstand and lower the unit to achieve a safe and stable configuration. CNS tooling engineers believe that the anti-rotation feature of the workstand has worn out, similar to a previous occurrence (see 12/18/15 report). Operations on other copies of the workstand have been paused. CNS is developing a temporary procedure to transfer the unit to a separate workstand to evaluate the degradation.