

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 17, 2017

**MEMO TO:** Steven Stokes, Technical Director  
**FROM:** Ramsey Arnold and Zachery Beauvais, Pantex Plant Resident Inspectors  
**SUBJECT:** Pantex Plant Report for Week Ending November 17, 2017

**DNFSB Activity:** Chairman Sean Sullivan was on-site November 14-15. During the visit, he observed nuclear explosive operations on multiple weapon programs and several nuclear material surveillance activities. D. Andersen and C. Berg conducted a review of nuclear explosive cell catenary cable in-service inspections (see 7/21/17 report). J. Anderson observed the W88 nuclear explosive safety study.

**Safety Basis:** DNFSB staff members identified hazard scenarios on one program with unscreened weapon responses for high order consequences that do not have safety class controls to prevent the hazard. Though acceptable when the safety basis was first developed, this practice no longer meets expectations of DOE Standard 3016, *Hazards Analysis Reports for Nuclear Explosive Operations*. The resident inspectors and staff discussed the concern with CNS safety analysis engineering and NPO management. CNS previously addressed similar issues as part of its documented safety analysis improvement project, but considered this effort resolved. CNS entered the concern into their new information system but had not yet dispositioned it. CNS performed an extent of condition review and identified a similar issue on a second program.

CNS declared a potential inadequacy of the safety analysis on one weapon program following the receipt of weapon response information from the design agency that indicated an existing electrical tester weapon response is not bounding. Impacted tester operations are paused.

**Maintenance:** While observing monthly preventive maintenance work on an uninterruptible power supply (UPS) that supports nuclear explosive cells, DNFSB staff members identified that the procedure was designated as “critical use.” Critical use procedures are intended for nuclear explosive work and require performance of steps in sequential order with strict adherence to the reader-worker-checker practice. The procedure in question was intended to be written and executed at a specific use level. The technicians performed the work at an acceptable level for a specific use procedure, but did not follow the more strict requirements for critical use. CNS completed an extent of condition review to identify other procedures that are incorrectly designated as critical use, and identified over one hundred inaccurately categorized maintenance procedures. The majority of impacted procedures were for work on the UPS, which is not a credited safety control but is considered important-to-safety; however, four identified procedures were for maintenance on safety class voltage regulators. Facilities engineering is working with maintenance planning to change the level-of-use of all impacted procedures accordingly.

**Nuclear Explosive Operations:** Production technicians (PT) executed a temporary procedure to investigate a tooling issue encountered when attempting to engage a lifting and rotating fixture on a unit in the vacuum chamber (see 11/9/17 report). Based on the investigation, tooling engineers determined that the special tooling met design requirements, however, the hole depth of the mating weapon component was shallower than expected. PTs executed a second temporary procedure to add an additional washer under each screw head to allow for adequate engagement of the fixture prior to lifting the unit. Subsequently, PTs paused operations on a second unit when the same engagement issue was encountered.