

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 21, 2017

**MEMO TO:** Steven Stokes, Technical Director  
**FROM:** Ramsey Arnold and Zachery Beauvais, Pantex Plant Resident Inspectors  
**SUBJECT:** Pantex Plant Report for Week Ending July 21, 2017

**Maintenance:** Over the past several weeks, the resident inspectors have observed multiple maintenance activities, on both day and swing shift, including preventive maintenance on blast door interlocks, hoists, radiation alarm monitoring systems, and fire protection systems, and troubleshooting and corrective maintenance on fire protection systems. The resident inspectors have noted good workmanship, system knowledge, and attention to potential facility hazards by the different maintenance personnel. On multiple occasions, maintenance personnel proactively paused the maintenance activity when the facility or system configurations prevented work from being performed (e.g., nuclear explosives staged in a facility were within the fall-down distance of required elevated work, and facility air was unavailable to inspect a hoist). When these instances occurred, the maintenance personnel made the proper notifications to their supervisor and the facility manager so the issues could be resolved appropriately. While the observed conduct of operations has generally been proficient, the resident inspectors have noted instances where maintenance personnel deviated from the verbatim instructions of the maintenance procedure without seeking additional approvals. These were discussed with the maintenance personnel and supervisor when they occurred. The resident inspectors have shared their observations with NPO and CNS regarding the following aspects of maintenance work: facility turnover and work authorization process, facility configuration, communication of conditions requiring two-person control, use of troubleshooting template procedures, performance of dual verification steps, and procedure clarity and usability.

**Damaged Detonator Cable Assembly (DCA):** During weapon disassembly operations earlier this year, production technicians encountered a cut DCA (see 5/12/17 report). The unit was later determined to have met the criteria for an anomalous unit, as defined in the DOE Order 452.2E, *Nuclear Explosive Safety*. The location of the cut prevents use of the previously authorized process for isolating the DCA by applying insulating, plastic tape. In coordination with the design agency, CNS process engineering developed a temporary procedure specifying the sequence of operations required to safely remove the DCA and achieve isolation. The process includes steps to install and use a plate removal tool before the DCA is isolated with the tape, but otherwise follows the previously authorized process. The design agency assessed the damaged DCA and determined that the damage does not adversely affect its weapon response. NNSA performed a NES change evaluation, and concluded that the proposed operations do not violate the NES standards. CNS submitted a justification for continued operations on the specific unit.

**Catenary Cable Inspection:** The resident inspectors observed CNS system engineers perform an in-service-inspection (ISI) of the catenary cable system in a nuclear explosive cell. The catenary cables are part of the safety class “gravel gertie,” part of the facility structure design feature. The ISI is performed on a ten-year periodicity to identify any obvious signs of degradation on the cables, such as excessive wear, broken strands, excessive corrosion, or loose clamps. The system engineers did not identify any notable signs of wear that would compromise the ability of the system to perform its safety function. In addition to the ISI, system engineers performed extensive laser scanning of the cables in an ongoing effort to develop a three-dimensional visual model of the system to aid in future inspections.