

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 15, 2016

MEMO TO: Steven Stokes, Technical Director
FROM: Ramsey Arnold and Zachery Beauvais, Pantex Site Representatives
SUBJECT: Pantex Plant Report for Week Ending December 16, 2016

DNFSB Staff Activity: D. Andersen observed structural repair activities at two nuclear explosive cells where installation of non-compliant concrete previously occurred (see 5/27/2016 and 7/29/16 reports), and reviewed test reports related to the commercial grade dedication of splices and the concrete mix design. In addition, the Board staff member and a site representative walked down the on-site batch plant that will supply concrete for the repairs.

Cell Concrete Repair: CNS subcontractors began installing rebar and splices in the two cells being repaired; the installation process included testing of electrical conductivity across the splices to meet a credited safety function. During the installation, the Board staff member observed workers bending already in-place rebar. CNS had not previously evaluated this, which is required per American Concrete Institute codes. CNS paused rebar installation, revised the work specification to establish acceptable rebar bending limits, and then resumed the installation.

Broken Hoist Component: Last week during operations in a nuclear explosive bay, production technicians (PT) paused hoist movement when a muffler retainer ring fell from the hoist bridge, approximately 18 feet from the facility floor. The ring and locking mechanism components did not hit the units in the facility or PTs. Operations were immediately paused in the facility where the retainer ring fell, and subsequently, in all facilities with air-powered hoists. CNS declared this event as a violation of a hazard control credited in the safety basis; facility crane assemblies, including individual components, are credited to remain in place during and after a PC-3 seismic event. In order to release affected facilities from the pause, CNS system engineers walked down facilities with air-powered hoists to visually inspect that, if a muffler is present, the ring locking mechanism is properly engaged. The system engineers did not find any issues with other facilities and CNS has resumed operations in the majority of affected nuclear facilities. The muffler retainer ring that fell was replaced by maintenance personnel and the affected facility has also resumed operations. During semiannual hoist preventive maintenance (PM), personnel empty the muffler of any collected oil or lubricants and inspect the bridge and components for wear and damage. During the most recent semi-annual PM, nothing unusual was noted by the maintenance personnel upon completion of the work.

Latent Conditions: The presence of unknown or undocumented, latent facility or equipment conditions contributed to a number of recent events at Pantex. These events include the discovery of category 1 electrical equipment that did not meet safety basis requirements (see 11/18/2016 report), the discovery of missing and inaccessible fire dampers in a nuclear material facility (see 10/28/2016 report), and the loss of two person control to a nuclear facility after repair of door latch components with an undocumented modification (see 11/10/2016 report). In each instance, legacy documents for the facility or equipment did not contain pertinent details that, if present, could have prevented the issue. The string of recent events illustrates the risk presented by poor configuration management practices in years past that have not been fully addressed. While corrective actions are developed to address specific events, CNS has not developed a plan to broadly address configuration management gaps and deficiencies between current and previously acceptable practices to identify configuration management risks.