

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 16, 2018

MEMO TO: Steven A. Stokes, Technical Director
FROM: Ramsey Arnold, Chris Berg (Acting), and Zachery Beauvais, Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending March 16, 2018

DNFSB Staff Activity: C. Berg provided resident inspector coverage throughout the week. C. Scheider evaluated the warhead measurement campaign nuclear explosive safety study.

Safety Basis: The resident inspectors met with NPO and CNS personnel to discuss hazard scenarios with unscreened weapon responses for high order consequences that do not have safety class controls to prevent the hazard. Specifically, the resident inspectors identified an additional hazard analysis report (HAR) for one weapon program as having similar issues as previously seen in two other weapon program HARs (see 11/17/17, 12/8/17, and 12/29/17 reports). The resident inspectors also identified that another weapon program HAR utilizes the methodology of treating *sufficiently unlikely* weapon responses as screened—a precursor that could lead to high order consequence scenarios existing in the safety basis without safety class preventive controls.

Earlier this month, CNS declared a potential inadequacy of the safety analysis after identifying that mitigated frequencies for certain hazard scenarios on one weapon program may not be bounding, potentially requiring additional credited controls. CNS subsequently declared a positive unreviewed safety question. Resident inspectors met with safety analysis engineering personnel to discuss the basis for allowing operations to continue with only operational restrictions, i.e., requiring administrative procedures and specific training to ensure that removed weapon components of concern are lifted only as high as required to safely perform the task. Based on information from the design agency and the operational restrictions, hazard scenarios of concern will be within screening thresholds. CNS plans to develop a safety basis change package and will determine how to formalize this rationale.

Resumption of Operations: To resolve NPO comments, CNS resubmitted and NPO approved an evaluation of the safety of the situation to address electrostatic discharge hazards associated with the failure of plastic cable ties used to secure air hoses supplying facility hoists (see 3/2/18 and 3/9/18 reports). Additionally, CNS completed repairs to reroute these air hoses in the impacted facilities. Nuclear explosive operations have been released for work in these facilities.

CNS previously declared a technical safety requirement violation and restricted cut and cap operations on two weapon programs due to nuclear explosive operating procedures not fully implementing a specific administrative control to remove charge from dielectric materials (see 3/2/18 report). CNS revised nuclear explosive operating procedures to specify steps to dip dielectric tape, used during the process to isolate stuck components, in distilled water to remove excess charge. Based on these procedural changes, the cut and cap operational pause on the weapon programs has been lifted, allowing CNS to disposition units requiring this process.

Construction Operations: While drilling in a ramp, a subcontractor impacted a fire suppression system drain line—part of a balance of plant wet pipe system that protects an electrical room and ramp. Separately, during subcontractor floor resurfacing operations, an electrical fire occurred within a nuclear facility in repair mode (i.e., no material-at-risk present) due to usage of an improperly-sized power cord with the construction equipment. Pantex paused both operations.