DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 14, 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 14, 2017

DNFSB Staff Activity: J. Meszaros was onsite to augment resident inspector coverage.

Falling Component: Production technicians discovered an aluminum ring on the floor of a facility where non-nuclear, joint-test-assembly operations are performed. The ring, approximately 8 inches in diameter and weighing approximately 100 grams, was determined to have fallen from an overhead sound dampener. Dampeners are installed in several facilities at the plant, however only a subset have aluminum rings. CNS management paused operations in all the affected facilities. CNS facilities management determined that only one facility with the suspect dampeners, a radiography bay, contained nuclear material, and took action to containerize and remove it. They plan to remove the dampeners from this bay. Ceiling mounted appurtenances in the radiography bay, including the dampeners, have a safety class function to remain in place during and after a performance category 2 seismic event. Following the discovery earlier this year of sound dampeners in nuclear explosive bays with noncompliant connection points (see 3/10/17 report), CNS performed extent of condition walkdowns to evaluate the hazards posed by falling sound dampeners. Based on risk prioritization, the extent of condition had not yet reached the facilities affected by the current issue. CNS has established a recovery team to identify the actions necessary to resume operations in the affected facilities.

Flammable Vapors: During an implementation verification review of control changes for nuclear explosive cell operations (see 5/26/17 report), CNS personnel identified that exclusion distances from activities with flammable vapors were not properly listed in the cleanliness program procedure. This procedure is implemented to mitigate the presence of grit in conventional high explosives operating areas. The Pantex technical safety requirements (TSR) require flammable vapor controls to prevent the accumulation of vapors in the area of spark generating activities. For activities such as cleaning special tooling with isopropyl alcohol, this control can be implemented by applying a dry time and maintaining an exclusion area around the work. Per an analysis by fire protection engineering, the standoff for this activity should be 18 inches. When the cleanliness procedure was implemented in 2015, a value of 14 inches was listed. CNS management determined that the use of an incorrect exclusion area in the procedure violated the TSR. CNS management temporarily paused cell operations upon discovery of the issue, and revised the cleanliness procedure to implement the appropriate exclusion distance.

Safety Basis: CNS safety analysis engineering declared a potential inadequacy of the safety analysis on one weapon program, following receipt of information from the applicable design agency indicating that they had discovered an error in the released weapon response. The error indicated that the worker safety response would increase for numerous weapon configurations. Operations on this program remain paused while CNS determines a path forward. On a separate program, NPO completed a safety evaluation report that transmitted their approval of a change package to support an upcoming weapon program alteration start-up. To perform their review, NPO convened a safety basis review team, consisting of members from NPO and NNSA headquarters (see 4/21/17 report). The SER comes after multiple revisions of the change package were coordinated to address NPO review comments. Legacy operations on the program continue to be performed under a justification for continued operations.