

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 15, 2019

TO: Christopher J. Roscetti, Technical Director
FROM: Zachery S. Beauvais and Miranda McCoy, Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending November 15, 2019

Weapons Operations: CNS management resumed weapons operations that had been administratively paused this week (see 11/8/19 report). CNS weapons operations management briefed individual crews prior to releasing them back to operations and CNS nuclear safety officers, nuclear explosive safety representatives and weapons operations management provided enhanced oversight through the resumption.

Combustible Controls: Production technicians discovered a rolling chair within three feet of a loaded pit container upon entering a bay at the start of shift. Upon further investigation, CNS management discovered that electronics technicians introduced the chair to the area while performing monthly radiation area monitor maintenance the previous night. The Pantex technical safety requirements (TSR) include strict standoff distances for combustible materials left unattended in nuclear areas. The presence of a chair within three feet of a pit container violated those standoffs. The Plant has experienced numerous challenges in implementing this TSR (see 10/18/19, 11/22/17 and 4/28/17 reports).

Nuclear Criticality Safety (NCS): While addressing comments from a safety basis change package revising the criticality safety program description in the DSA, CNS NCS engineers and NPO personnel identified that several container types authorized for use through the approved container program had not been specifically evaluated by NCS. Pantex relies upon a broadly scoped criticality safety evaluation (CSE) to demonstrate sub-criticality for their normal operations and credible abnormal conditions. The CSE analyzes a wide range of contingency conditions but does not specifically evaluate individual container designs and configurations. CNS management implemented immediate compensatory measures to verify implementation of the applicable NCS controls. In investigating the event, CNS management identified that there is not a clear process for addressing NCS anomalies that may arise at Pantex. A prior management self-assessment conducted in 2018 observed that contingencies analyzed in the CSE lacked detail and specificity consistent with the corporate CSE writers' guide and did not clearly connect controls relied upon for criticality safety to specific contingencies. Other assessments have noted challenges with criticality safety change control (see 8/26/16 report).

Blast Valves: While performing an annual in-service inspection of a blast valve installed in a nuclear explosive cell, CNS special mechanic inspectors (SMI) identified that the blast valve required a greater closure force than allowed by the technical safety requirements. In consultation with the system engineer and CNS facilities personnel, the SMIs reperfomed the in-service inspection and once again identified a greater required closure force, failing the maintenance. Facilities management determined that this represented a degradation of the credited safety system. Facilities management has initiated a work order to repair the affected blast valve. The resident inspectors reviewed the relevant tracking and trending data collected by CNS system engineering and identified significant variability in previous results of this test. System engineering believes this is due to physical variability in the test setup.