

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 30, 2016

MEMO TO: Steven Stokes, Technical Director
FROM: Ramsey Arnold and Zachery Beauvais, Pantex Site Representatives
SUBJECT: Pantex Plant Report for Week Ending December 30, 2016

Charge Generation: During disassembly operations, PTs noticed a spark generated during the removal of a specific component on one unit. Operations were immediately paused on the affected program. The safety analysis does analyze electrical insults in this configuration but does not evaluate those caused by charge generation resulting in arcing or sparking, thus CNS Safety Analysis Engineering declared a potential inadequacy of the safety analysis (PISA). Sparking is a noted possibility in the nuclear explosive operating procedure for other operations with this component, but was not analyzed for the specific configuration. CNS, NNSA and the design agencies determined the affected unit did not meet the criteria to be declared anomalous. CNS intends to coordinate a weapon response request with the cognizant design agency to analyze this potential hazard.

Missed Surveillances: Through discussions with hoist mechanics during a field walkdown, a Pantex system engineer discovered that a required inspection of the hook latch mechanism on facility chain hoists was absent from the applicable maintenance procedure. The procedure implements an in-service-inspection specified in the facility technical safety requirements to visually inspect the hoist hook monthly and applies to pneumatic chain hoists installed in multiple nuclear explosive bays and cells. The step to verify that the hook latch is functioning properly was inadvertently omitted from the procedure in 2011 following a revision to implement a formatting change and migrate the procedure to a new electronic database. The missing step persisted through several procedure revisions in the five years prior to discovery. Production technicians are required to perform a hoist check that includes a visual inspection of the hook latch for cracks, deformation or damage prior to executing a lift, mitigating the risk of the missed surveillances, however the daily check is not intended to implement the ISI. The maintenance procedure has been subsequently revised to include the missing step.

2016 Year in Review: DOE and CNS completed the following accomplishments this year, related to safe nuclear explosive operations at the Pantex Plant:

- DOE and the CNS Emergency Management Department submitted an implementation plan to address deficiencies identified in Board Recommendation 2015-1, and completed the first two sets of quarterly deliverables.
- CNS, in conjunction with the cognizant design agencies, developed and executed a process to safely disassemble two anomalous units encountered in 2015.
- CNS implemented inherently dissipative stainless steel containers for packaging of sensitive components, allowing closure of a Justification for Continued Operations stemming from a 2015 PISA.
- CNS, in conjunction with the cognizant design agencies, implemented new special tooling on the W78 program to address deficiencies identified in 2009 and 2014 nuclear explosive safety evaluation findings.