

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 22, 2017

MEMO TO: Steven Stokes, Technical Director
FROM: Ramsey Arnold and Zachery Beauvais, Pantex Plant Resident Inspectors
SUBJECT: Pantex Plant Report for Week Ending September 22, 2017

DNFSB Staff Activity: P. Foster observed the nuclear explosive safety master study on electrical equipment including testers. J. Anderson observed an NNSA software quality assurance review of the Collaborative Authorization for Safety Basis Total Lifecycle Environment Pantex (CASTLE-PX) software, a tool used to generate portions of the safety basis.

Authorizations: NPO authorized CNS to start operations on an alteration campaign following CNS closure of the pre-start findings identified in the NNSA readiness assessment (RA, see 9/15/17 report). NPO performed a separate RA of an upcoming repair campaign on one weapon program. The RA team identified one post-start finding on operating procedure usability and provided twelve additional observations related to conduct of operations, contractor readiness, and safety basis implementation. The RA team observed that the contractor did not adequately execute its plan for completing its readiness activities before the end of the fiscal year, resulting in a compressed schedule for the NNSA RA. CNS plans to begin operations this weekend to support the campaign.

Rupture Discs (RD): CNS facility engineering personnel identified two discrepant RDs installed on the plant compressed air system during walkdowns conducted to support an upcoming safety basis change. The RDs are credited in the safety basis as safety class passive design features with functional requirements to limit the compressed air system to below 150 psi. The discrepant RDs, installed in 2015, were rated to rupture at 150 psi, however, when accounting for manufacturing tolerances would not necessarily meet the functional requirement. CNS safety analysis engineering (SAE) determined the condition represented a potential inadequacy of the safety analysis (PISA). Facilities management has isolated the affected portions of the compressed air system and pipefitters have installed compliant RDs.

Hose Whip Restraints: NPO staff recently questioned the applicability of the testing protocol designated for 35-account fiber tape (see 4/15/2016 report). Currently, CNS personnel certify that the tape meets its functional requirements by performing an adhesion to steel test on a sampling of tape. When the tape is used to restrain pneumatic hoses, it is adhered to itself or the polyvinyl chloride (PVC) hose. NPO personnel identified that there is not currently an analysis that demonstrates that the results of the adhesion to steel testing can be extended to the specific applications where the tape is used. SAE evaluated the identified problem and determined it represents a PISA. CNS process engineering has implemented operational restrictions to test the adhesion of the tape to itself and PVC and to require production technicians to only use tape from lots that have received the additional test. The tape is currently specified as a control on programs with conventional high explosives.

Quality Assurance: NPO approved the annual update of the CNS Quality Assurance Program Description (QAPD) with no conditions of approval. The QAPD establishes the CNS enterprise-level (i.e., Pantex and Y-12) quality program and describes the implementation of requirements. This marks the first QAPD to be approved with no conditions of approval (see 12/21/16 report) since CNS began consolidating the Pantex and Y-12 QAPDs into one program.