

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 15, 2018

TO: Steven A. Stokes, Technical Director
FROM: Ramsey P. Arnold and Zachery S. Beauvais, Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending June 15, 2018

DNFSB Staff Activity: F. Bamdad, E. Fox, R. Jackson, A. Poloski, and S. Seprish were on-site to conduct interactions with CNS and NPO personnel.

Confined Large Optical Scintillator Screen Imaging System (CoLOSSIS): The resident inspectors observed process demonstrations conducted to support the contractor readiness assessment (CRA) of CoLOSSIS 2. The quality assurance technicians (QAT) demonstrating the operations displayed a high level of system knowledge and familiarity with the operations. The governing procedures for CoLOSSIS 2 are general use, and do not require reader-worker-checker protocol. The project team elected to demonstrate all operations using this more formal approach as opposed to the protocol that is normally used for this level of procedure. The CRA included a drill where the QATs demonstrated their response to a security event requiring them to shelter-in-place. The QATs performed the expected actions, as designated in the personnel response manual. Personnel from the NNSA Office of Safety, Infrastructure, and Operations observed the drill in preparation for the upcoming federal readiness assessment (FRA).

Warhead Measurement Campaign (WMC): The resident inspectors observed process demonstrations on one weapon program conducted to support the FRA for the WMC. The FRA follows development of adequate corrective action plans or closure of the 21 pre-start and 4 post-start findings from the CRA (see 5/25/18 report). Additionally, the WMC nuclear explosive safety study (NESS) documented two findings (see 3/9/18 and 3/16/18 reports). The scope of the NESS and CRA addressed measurement operations for three weapon programs. While CNS has submitted a closure package for one NESS finding, they need additional time to close the second finding specific to only one weapon program. The finding states that the special tooling used to hold the unit does not have an adequate electrical isolation theme, as required by DOE Order 452.2E, *Nuclear Explosive Safety*. The FRA is proceeding but has de-scoped the one weapon program while CNS develops a finding closure strategy.

Safety Basis: Last week, CNS determined that adequate controls may not be in place to protect an initial condition of the safety basis that assumed a nuclear explosive preset tester would remain stable following a design basis seismic event or an impact by a falling technician. The tester is not inherently stable, given its center of gravity height and dimensions of its wheelbase. Due to this design limitation, one of the tester's four casters must be locked at all times except when under the control of technicians, to prevent unconstrained motion in the event of a design basis seismic event or technician impact. This requirement was not protected in the safety basis and was not implemented in the applicable operating procedures. As a result, CNS determined that this situation represents a potential inadequacy of the safety analysis (PISA). The DNFSB staff provided specific questions on this topic, prior to the PISA declaration. CNS has recently identified similar issues on other pieces of electrical equipment (see 4/13/18 report). Related to a separate issue, CNS safety analysis engineering has determined that a PISA on freestanding equipment meets the criteria to be a positive unreviewed safety question (see 6/1/18 report).