

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 22, 2016

MEMO TO: Steven Stokes, Technical Director
FROM: Zachery Beauvais, Pantex Site Representative
SUBJECT: Pantex Plant Report for Week Ending January 22, 2016

Procedure Nonadherence: On January 18, 2016, Production Technicians (PTs) paused a nuclear explosive disassembly operation after being unable to perform a procedural step requiring that they secure a piece of tooling to the workstand. Upon further inspection by the PTs and their section manager, they determined that the piece of tooling had been bent during a pressing operation performed immediately prior to the pause. A prior procedural step required PTs to raise the trunnions on the workstand to the highest position. The PTs failed to perform this step as directed, and the trunnions were approximately nine inches below the intended position during the pressing operation. As a direct result of this nonadherence, the pressing operation caused the trunnions to contact and bend the tooling. The nuclear explosive operating procedure (NEOP) directing this work requires PTs to perform the work using the reader-worker-checker routine, thus requiring the reader to verify the step has been completed properly. On January 20, Consolidated Nuclear Security, LLC (CNS), conducted a critique on the issue. During the critique, the PTs performing the step did not identify any conditions affecting their concentration. CNS Tooling and Machine Design (TMD) is developing an engineering evaluation of the workstand and tool, and CNS Production and Manufacturing Engineering is developing a Nuclear Explosive Engineering Procedure to move the unit to a new workstand.

Incomplete Load Path Analysis: In response to a line of inquiry on the stability of a unit when installed on an insertion stand, developed for an ongoing Nuclear Explosive Safety Study, CNS TMD determined that the analysis performed to demonstrate that an insertion stand met the safety basis requirement to withstand a Performance Category 3 seismic event did not properly account for all components and forces. Specifically, the Hazard Analysis Report for this program requires special tooling that supports nuclear explosives to be designed to withstand a PC-3 seismic event without toppling, with a minimum safety factor of 1.25:1 at yield strength. The analysis to support the requirement did not account for the horizontal load applied to hand knobs installed on the stand. Initial analyses performed by TMD showed that inclusion of these forces would challenge the required safety factor for the affected components. Following this discovery, CNS declared a violation of the Documented Safety Analysis and paused operations requiring use of the insertion stand.

Pantex Maintenance Management Program: Last week, CNS, issued a letter to the NNSA Production Office (NPO) documenting their planned actions to improve the Maintenance Management Program at Pantex and the Y-12 National Security Complex. The corrective actions address deficiencies raised during a June 2015 DNFSB staff review, subsequently addressed in NPO correspondence. The letter proposed corrective actions for Pantex including implementing a predictive maintenance program, performing a management self assessment of the activity hazard analysis process, and increasing the expectation for section managers to observe pre-job briefings for maintenance activities. Additionally, on January 20, CNS conducted and the site representative attended a Causal Analysis-Mistake Proofing meeting held to develop corrective actions specific to maintenance performed on the fire protection system, including requirements for component labeling and expectations for fire protection engineers to validate maintenance procedures.