

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 5, 2018

MEMO TO: Steven Stokes, Technical Director
FROM: Ramsey Arnold and Zachery Beauvais, Pantex Plant Resident Inspectors
SUBJECT: Pantex Plant Report for Week Ending January 5, 2018

Special Tooling Functional Requirements: Special tooling engineers generated an editorial change to a design requirements document (DRD) for a piece of special tooling that is used during nuclear explosive cell operations on one program. The special tooling utilizes safety catches and a vacuum system to remove a weapon component from the unit during disassembly. Along with updating references, the proposed DRD change removed three vacuum fixture functional requirements due to them not being identified in the approved hazard analysis report (HAR). The HAR did not identify the tool as a credited vacuum system and, therefore, did not identify the applicable vacuum fixture-related functional requirements for the tool. When completing the unreviewed safety question evaluation process for the DRD, a safety analysis engineer identified a discrepancy with the controls listed in the HAR. Specifically, the engineer identified that the HAR should have included the vacuum fixture functional requirements for this piece of tooling. Through investigating the issue further, CNS identified that the applicable functional requirements were inadvertently excluded from the HAR due to a configuration management (CM) issue during implementation of a safety basis change package to upgrade special tooling on this program (see 10/14/16 report). Upon discovery of the CM issue, CNS administratively paused the cell operations on the program. The HAR for this program also implements a specific administrative control (SAC) requiring production technicians to verify the functionality of safety catches prior to using vacuum fixtures. Safety analysis engineering questioned whether the SAC could be implemented as written, based on the design of the tooling. CNS declared a potential inadequacy of the safety analysis after determining that the vacuum fixture SAC should apply during use of the special tooling, and that one of the applicable functional requirements will need to be updated to ensure that the safety catches are properly engaged during use of the fixture. Although otherwise unrelated, this issue follows the discovery of incomplete flow-down for a separate tooling SAC, implemented as part of the same tooling upgrade project (see 10/27/17 report), and other recent issues with DRD evaluations (see 12/1/17 report).

Fire Protection System: Special mechanic inspectors (SMI) executed a semiannual fire protection system preventive maintenance (PM) procedure in a nuclear explosive bay. While completing a test of the deluge system manual trip station, SMIs noted that a pressure gauge in the deluge valve (DV) did not reach the required pressure. The step was not marked as surveillance requirement-related, so the SMIs noted the issue and continued the PM, including restoring the deluge valve. Following restoration, the gauge was within its normal operating system pressure. Upon completion of the PM, the SMIs noted the discrepancy to their supervisor. The supervisor, facility representative, and fire protection engineering (FPE) determined that because the gauge did not reach the required pressure during the trip station test, they could not assume the DV was fully operational. Because no material was in the facility at the time, this was categorized as a degradation in the safety class system when not required to be operable. The system remained in the limiting condition for operations, previously entered to start the PM. SMIs, with the guidance of the FPE, executed a troubleshooting procedure to resolve the gauge issue. The system has been restored and is operational.