

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 20, 2017

MEMO TO: Steven Stokes, Technical Director
FROM: Ramsey Arnold and Zachery Beauvais
SUBJECT: Pantex Plant Report for Week Ending April 21, 2017

Personnel Evacuation Specific Administrative Control (SAC): Within the past three weeks, Pantex has declared two potential inadequacies of the safety analysis (PISA) related to separate instances where the safety basis improperly credited a personnel evacuation SAC to mitigate a hazard. With the first PISA, the consequences of a lightning strike to a canned subassembly (CSA) during hoisting operations on a weapon program were mitigated incorrectly by crediting the SAC. During an implementation verification review of the nuclear material safety analysis report annual update, a reviewer noticed that several accident scenarios had unscreened consequences and questioned the acceptability of crediting the personnel evacuation SAC, which does not explicitly call for its usage during CSA-related activities. The operation already requires production technicians (PT) to utilize a hoisting sling that provides path-on insulation from lightning strikes. To correct this issue, CNS submitted an authorization basis (AB) change package to no longer credit the SAC for this accident scenario, and to instead credit the hoisting sling. NPO issued a safety evaluation report (SER) to approve the AB change package.

With the second PISA, the personnel evacuation SAC was improperly credited to mitigate a tritium release during an operation on a separate weapon program. This is the third issue discovered in several weeks related to the quality of the approved safety basis that was implemented as a result of an extensive update to the weapon response information in 2013 (see 2/28/14 and 4/13/17 reports). PTs already utilize radiation monitors during the operation to detect leaks; however, this activity was not credited in the safety basis. CNS plans to address this PISA by properly crediting the usage of radiation monitors in lieu of the SAC. The resident inspectors note that the two unrelated instances of inappropriate usage of the personnel evacuation SAC and three instances of issues with the safety basis of a particular program could represent two separate extent of condition questions.

Technical Safety Requirement (TSR) Violation: PTs inappropriately staged a thermally sensitive component (TSC) within the required stand-off distance from the task exhaust, which was determined to be combustible in 2015 (see 3/6/15 report). During a periodic walkdown of facilities, the facility representative and fire protection engineer identified the stand-off distance TSR violation. Pantex personnel took immediate actions to move the TSC outside of the required stand-off distance and to walkdown additional facilities to confirm that no further violations exist. Prior to the discovery, a second crew of PTs had entered the facility to perform material moves; however, they did not notice the violation. Seven similar combustible control stand-off distance violations have occurred since 2012 (see 11/16/12, 11/30/12, 2/28/14, 2/27/15, 3/6/15, 6/26/15, and 5/6/16 reports). CNS will convene a causal analysis and corrective action development meeting to address the violation.

Safety Basis Review Team (SBRT): NNSA began an SBRT assessment of an AB change package that CNS submitted for an upcoming weapon program alteration start-up (see 1/13/17 report). The SBRT held meetings with CNS regarding the change package, began to review the change package, and observed demonstrations of the proposed nuclear explosive operations. The review will continue for multiple weeks with the goal of preparing a SER for NPO approval.