

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 7, 2016

MEMO TO: Steven Stokes, Technical Director
FROM: Ramsey Arnold and Zachery Beauvais, Pantex Site Representatives
SUBJECT: Pantex Plant Report for Week Ending October 7, 2016

Potential Inadequacy of the Safety Analysis (PISA): Pantex safety analysis engineering personnel declared a PISA when they discovered that the current DSA applied less conservative weapon response values than those approved by the design agency (DA) for postulated lightning strike to a particular configuration of a single weapon program. The discovery was made when a safety analysis engineer was migrating the accident analysis from the site-wide safety analysis report (SAR) to the transportation SAR as part of a DSA improvement initiative. Pantex has temporarily disallowed transportation activities for the affected unit configuration when lightning warnings are in effect.

Nuclear Explosive Safety (NES) Change Evaluation (NCE): NNSA conducted an NCE to evaluate the replacement of batteries within the power supply for the code management system, a type of category one electrical equipment. Commercially available batteries currently used in the power supply for this equipment were manufactured over ten years ago and are reaching the end of their useful life, thus dictating the need for replacement. The batteries will be replaced with new versions meeting the same functional requirements but manufactured through a slightly different process. The NCE determined that use of the replacement batteries does not pose a NES concern. The DA responsible for the design of this electrical equipment did not submit the battery change for NES change control. It was only performed following the direction of the Pantex process and tester engineers knowledgeable with the NES requirements. A recent NES study identified a finding related to implementation of this process at the DAs.

Justification for Continued Operations (JCO): In 2015, Pantex declared a PISA on two weapon programs when a potential vulnerability to a potential electrostatic discharge (ESD) hazard was discovered in a common electrical isolator (see 6/26/15 and 7/10/15 reports). Last week, Pantex received an information engineering release (IER) from the DA stating that after further testing and evaluation, the potential vulnerability does not exist, and the safety basis can revert back to the previously utilized weapon response rules. Based on this IER, CNS archived the JCO that was in effect since July 2015. Current operations will continue to utilize the additional controls originally specified by the JCO. On a separate weapon program, NPO approved an extension to a previously approved JCO that incorporates compensatory measures to mitigate ESD hazards. NPO previously released a safety evaluation report that would have closed the JCO by incorporating inherently dissipative containers into the safety basis (see 9/16/16 report). Due to delays with the procurement of the containers, the JCO was re-extended to allow for operations to continue through the end of November, or until the containers are implemented.

Approved Equipment Program (AEP) Assessment: NPO issued a memorandum documenting an assessment of the AEP which includes the electrical equipment program for testers. The assessment identified several findings, most notably, that the currently approved DSA does not analyze particular accidents involving the use of electrical equipment when connected to a nuclear explosive or identify the testers as safety-related controls. NPO requested a corrective action plan from CNS to address the communicated issues.