

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 28, 2017

**MEMO TO:** Steven Stokes, Technical Director  
**FROM:** Ramsey Arnold and Zachery Beauvais  
**SUBJECT:** Pantex Plant Report for Week Ending April 28, 2017

**Combustible Controls:** During a required semi-annual walkdown of a special nuclear material (SNM) staging bay, fire protection engineers discovered a containerized pit inside the standoff from the facility hoist pendant (a combustible), in violation of the technical safety requirements (TSR). The hoist was parked in its approved location. The SNM package had been introduced to the facility in November 2016. From the facts presented at the critique, it is unclear when the staging configuration first came in violation of the TSR. While accompanying personnel from production stores to move a separate SNM package into the facility last week, the CNS facility representative had not noticed any non-compliances, but exited the facility prior to the personnel from production stores. An operator aid specifying the standoff distances for various combustibles, and reinforcing the requirement to perform a combustible materials sweep prior to exiting the facility, was posted on the personnel access door to the bay where the violation occurred. Production stores personnel had received training to the combustible controls procedure as a corrective action stemming from a TSR violation in 2016 (see 7/8/16 report), and the personnel involved in the event noted that they were familiar with the requirement.

CNS held a causal analysis and corrective action development meeting following a recent violation of the same TSR (see 4/21/17 report). The assembled team recommended a credible set of corrective actions to prevent recurrence of the specific event, including recommending the removal of combustible task exhaust hoses from facilities used for nuclear explosive staging, but did not identify actions to address the broader challenge of frequent combustible standoff violations. The need for improvements to the implementation of combustible controls has been previously identified by CNS internal assessment teams (see 7/22/2016 and 11/10/2016 reports), but many of the suggested improvements are yet to be realized.

**Nuclear Explosive Safety (NES):** Last week, a unit failed a leak test performed during vacuum chamber operations following assembly. The source of the leakage is not readily apparent. To address the condition, CNS process engineering proposed a temporary procedure to partially disassemble the unit, replace o-rings and other potential sources of the leakage, and then reassemble the unit using the normal process. This operation requires repeating electrical tests that had been performed as part of the initial build, and proposes additional steps to place the unit in a configuration that is analyzed in the existing safety basis, but is not directly necessary for completion of the rebuild. In an information engineering release concurring with the proposed operation, the design agency stated that the “amount of operations necessary to achieve the required quality is being artificially increased due to the inflexibility of the Pantex Authorization Basis to accommodate the “minimum amount of recovery operations.”” The resident inspectors observed an NCE held to evaluate the proposed operations. The NES study group concluded that the proposed operations do not violate the NES standards, but reiterated their commitment to a deliberation topic on unnecessary operations from an NCE conducted to address a similar issue in 2016 (see 9/23/16 report). Following the 2016 NCE, NPO directed CNS to incorporate additional weapon configurations into their safety basis so that these operations could be performed more directly. CNS and the design agencies have taken initial steps towards completing this action, but the weapon response is not yet available.