

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 6, 2016

MEMO TO: Steven Stokes, Technical Director
FROM: Ramsey Arnold and Zachery Beauvais, Pantex Site Representatives
SUBJECT: Pantex Plant Report for Week Ending May 6, 2016

DNFSB Staff Activity: J. Mercier observed the B61 Nuclear Explosive Safety Study (NESS).

Technical Safety Requirement (TSR) Violation: During a periodic combustible loading walkdown of a special nuclear material staging bay, a CNS Fire Protection Engineer discovered a radiation shield stand, considered a combustible, in the vicinity of thermally sensitive components. The TSR, implemented through the combustible materials operating procedure, requires that the shield stand be relocated to the bay interlock when not in use. The facility was previously used for nuclear material processing and was transferred to staging activities in October 2015, it is likely the stand remained in the facility following the transfer. At that time, CNS executed their local process for transferring a facility to interim staging operations, a process that explicitly requires verification that combustibles have been appropriately dispositioned. Additionally, the TSR requires that the location of combustibles be verified at the beginning of each shift and prior to leaving the facility unattended. Both of these barriers failed to detect the violation. The site representatives note that the critique conducted on the violation suffered from a lack of available information. Subsequently, CNS personnel performed an additional investigation of the violation that provided greater insight and detail.

Tape Adhesion: CNS personnel declared a noncompliance with the documented safety analysis (DSA) when they discovered that one tape that is credited in the DSA to prevent hose-whip accidents is impacted by the tape adhesion testing errors (see 4/29/2016 report). As CNS personnel continued to investigate the extent of condition, they discovered an additional industry standard that is applied to the testing protocol and an error in implementation of the testing protocol, further increasing the number of affected tapes. Before restarting operations, CNS personnel are preparing software quality assurance (SQA) documentation including requirement specifications and a test plan in order to properly qualify and validate the software used in tape adhesion testing. Also, CNS is completing a management assessment (MA) to determine if other 35-account tape tests use software that need to be maintained as safety software. Further, personnel are retesting tapes and recalculating test values in a prioritized fashion. E.g., the DSA-credited tape has been tested and confirmed to meet the requirements. No nuclear explosive operations that require 35-account controlled tape have been released for work at this time.

Special Tooling: During process demonstrations on an inert trainer unit, a piece of special tooling failed to maintain air pressure to a bladder used to hold components. The bladder lost pressure during a step where a case component was being rotated above the unit, after the tooling was rotated to a configuration where gravity prevented the component from falling. During this particular step, a secondary control is not in place to prevent impacts to the unit. A similar tooling failure occurred during a readiness activity in March 2016. At that time, CNS Tooling and Machine Design (TMD) could not recreate the failure and did not report the issue. CNS TMD will perform an extent of condition, across all weapon programs, to determine other steps where tooling uses pneumatic forces to perform lifts but lacks a second control, and will consider a modification to the tool to prevent impacts to the unit in the event of a similar failure.