

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 19, 2017

MEMO TO: Steven Stokes, Technical Director
FROM: Ramsey Arnold and Zachery Beauvais
SUBJECT: Pantex Plant Report for Week Ending May 19, 2017

DNFSB Staff Activity: C. Berg and D. Bullen observed the kickoff of the W80 Alt 369 Nuclear Explosive Safety Study.

Qualified Containers: CNS engineering determined that damage discovered on six AL-R8 sealed insert containers constituted a degradation of a passive, safety class design feature. The containers are used to store pits and each consists of a stainless steel sealed insert, housed within thermally resistant fiber board, inside of a steel drum. Six drums were found to contain rust, visible on the exterior drum. Two of these drums were found with holes rusted through the container lid. CNS determined that the affected containers were located in a Zone 4 nuclear material storage magazine that experienced flooding in 2010 (see 7/9/10 report). CNS believes that the damage was likely caused by moisture entering the containers during this event, with accelerated degradation due to the release of corrosive gases from a reaction between water and the fiber board. The safety basis requires an approved container to be used during nuclear material transportation and staging. CNS process and safety analysis engineering are evaluating the damage to determine if transportation of the containers violated this requirement and to determine if the discovery represents a potential inadequacy of the safety analysis. The pits contained within each of the affected containers have been repackaged into new containers.

Damaged Detonator Cable Assembly (DCA): While using a brass hammer to install tapered tapes to attach a case component per the nuclear explosive assembly procedure, production technicians (PT) paused operations after the hammer rolled off of the tape and contacted the DCA, causing minor damage. The DCA was determined to not be severed, but showed a minor impression. Per an authorized contingency in the operating procedure, PTs applied insulating tape to the affected area. Operations with the unit are paused while process engineering develops a temporary procedure to place the unit in a transportable configuration, prior to staging it in a separate facility, until CNS and the design agency determine the appropriate additional actions.

Quality Assurance (QA) Activities: Based on questions from NPO and the resident inspectors (see 1/6/17 and 1/27/17 reports), CNS held a tabletop discussion to walk through examples of QA procurement activities for safety-related items. If an item performs a safety function as identified by the safety basis, and is not available for procurement through a NQA-1 supplier, the CNS processes require commercial grade dedication in certain instances. The resident inspectors note that a gap may exist with the procurement documentation requirements for items with passive, safety-related design features, as defined and implemented in the current QA processes. For example, the safety basis designates all hanging hoist components (e.g., a crane muffler ring) and facility appurtenances in nuclear explosive facilities as passive, safety class design features with functional requirements to remain in place during a Performance Category 3 seismic event. Although these components are not relied upon to perform an active safety function following a seismic event, the quality pedigree of the components, including installation, needs to assure they meet the functional requirement to not fail or fall. Examples discussed during the tabletop demonstrated that the current procurement procedures can be interpreted to allow for potentially less thorough, procurement activities for these items.