

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 26, 2017

MEMO TO: Steven Stokes, Technical Director
FROM: Ramsey Arnold and Zachery Beauvais
SUBJECT: Pantex Plant Report for Week Ending May 26, 2017

DNFSB Staff Activity: J. Anderson observed the W80 Alt 369 Nuclear Explosive Safety Study.

Qualified Containers: CNS stood up an issue resolution team after discovering further corrosion on AL-R8 sealed insert containers (see 5/19/17 report). Upon further inspection of the original six containers, CNS discovered additional corrosion damage including a hole on the side of a third AL-R8 container at the seam. Based on the initial inspection data, CNS safety analysis engineering (SAE) evaluated the damage and determined that it did not degrade the ability of the container to meet its qualitative safety functions. This determination was partly based on a conclusion that a plastic bung installed on the container lid is designed to fail in fires, and thus the presence of additional penetrations on the lid would not affect its performance. CNS SAE evaluated the additional corrosion damage as a discrepant-as-found condition and determined that it represents a potential inadequacy of the safety analysis (PISA). CNS is also in the process of inspecting Zone 4 nuclear material storage magazines to better understand the extent of the condition. From visual inspections, CNS personnel have identified additional containers that show signs of potential corrosion (i.e, bubbling of the exterior container paint and rust). While the majority of visibly corroded containers were in magazines affected by the flood, at least one container with signs of corrosion has been identified in an unflooded magazine.

High Pressure Fire Loop (HPFL): Earlier this month, an NPO facility representative identified multiple issues during the installation of high density polyethylene (HDPE) piping by subcontractor personnel. The piping installation was performed as part of ongoing replacement of the safety class HPFL lead-ins for two nuclear explosive bays. During the installation of electrofusion couplings, a process that requires melting and fusing sections of HDPE piping, NPO observed HDPE visibly melted and exposed coupling wire at the piping connection. Both of these conditions indicate that the coupling was improperly installed and will not meet quality requirements. NPO also observed that the subcontractor personnel completing the work did not have tools specified in their installation procedure available and made deviations from the procedure that could degrade the quality of the connection. CNS completed a non-conformance report on the applicable sections of the lead-in and plans to re-perform the installation. The subcontractor work on the HPFL remains paused.

Conventional High Explosive Impact Hazards: CNS requested additional weapon response information from the design agency (DA) related to accident scenarios that involve main charge conventional high explosive drops for a program. The requested information, which includes different drop heights and surface materials, will help Pantex further characterize postulated accident scenarios and assure that they are appropriately controlled (see 5/12/17 report). CNS is developing a justification for continued operations, which NPO will need to approve prior to restarting cell operations. The DAs are in the final stages of releasing an updated set of weapon responses for all operations on the program. CNS requested that NPO allow a three week extension on the PISA determination time, given the scope of the new weapon response information and time it will take for CNS to identify the scenarios where a more conservative weapon response may indicate that the current documented safety analysis is inadequate.