

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 4, 2017

MEMO TO: Steven Stokes, Technical Director
FROM: Ramsey Arnold and Zachery Beauvais, Pantex Plant Resident Inspectors
SUBJECT: Pantex Plant Report for Week Ending August 4, 2017

DNFSB Staff Activity: J. Anderson, C. Berg, B. Caleca, and M. McCoy conducted an onsite review of the special tooling program.

Contractor Readiness Assessment (CRA): CNS personnel began a CRA on one weapon program in preparation for the startup of alteration operations and authorize disassembly following safety basis and process upgrades (see 1/13/17 and 7/14/17 reports). The CRA team completed process demonstrations which included an emergency management drill where production technicians (PT) simulated their response to an injured PT. During the drill, communication issues with radiation safety occurred and were discussed during the hotwash.

Qualified Containers: CNS briefed NPO on efforts to determine the causes of corrosion discovered on AL-R8 2030 containers and to resume pit and container surveillance activities (see 5/19/17 and 6/2/17 reports). CNS detailed their approved test plan to assess the technical causes of corrosion observed on the containers. The test plan specifies the use of non-destructive and destructive techniques to determine the presence of reactive compounds in the Celotex material, analyze the surface chemistry of corrosion samples, and perform several additional inspections. CNS scientists have started testing the original six containers identified with degradation. After the initial declaration of a potential inadequacy of the safety analysis related to the possibility for degradation of qualified containers, CNS implemented operational restrictions on movement of the highest thermal output pit type. Following discussions with NPO this week, CNS administratively extended the restriction to all pit types. CNS submitted to NPO a justification for continued operations (JCO) to resume inter-zone transportation of special nuclear material.

Nuclear Explosive Operations: PTs received an out of tolerance reading while performing an electrical test on a mechanical safe and arm detonator (MSAD), requiring entry into their immediate action procedures (IAP). A program specific nuclear explosive safety rule (NESR) requires that the MSAD be verified to be in the safe position before further disassembly. The out of tolerance reading prevented the PTs from verifying that the NESR was met. Earlier this year, PTs experienced an out of tolerance reading during the same test series on a separate unit (see 6/2/17 report). Following resolution of that issue, CNS submitted changes to the nuclear explosive operating procedures (NEOP) to no longer dictate IAP entry for this condition. The changes are awaiting an unreviewed safety question review and are yet to be implemented. On a separate unit of the same program, PTs encountered resistance while removing a metallic, outer case component, requiring them to pause the operation and seek a safe and stable determination. The configuration of the unit prevents PTs from performing steps in the NEOP to install conductive tape to electrically bond inner and outer case components, and prevent them from acting as a capacitor. A similar configuration was discussed as a deliberation topic during the most recent nuclear explosive safety study (NESS) on this program. At that time, the NESS group concluded that there was not a credible pathway to lead to high order consequences in the specific configuration. Personnel from CNS and the design agencies determined that neither of these units met the anomalous unit criteria. Operations on both of these units remain paused, as CNS and the design agencies develop paths forward.