

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 2, 2017

MEMO TO: Steven Stokes, Technical Director
FROM: Ramsey Arnold and Zachery Beauvais
SUBJECT: Pantex Plant Report for Week Ending June 2, 2017

Immediate Action Procedures (IAP): Production technicians (PT) entered IAPs, as directed by the nuclear explosive operating procedure, during surveillance operations when a mechanical safe and arm detonator (MSAD) electrical test resulted in a reading that was outside of the acceptable range. The PTs disconnected the electrical tester from the unit and then made the appropriate notifications. Responding personnel, including safety analysis engineering, process engineering, and nuclear explosive safety (NES), made a safe and stable determination requiring no further action to the unit. Based on the possible configuration of the unit and what was approved in the last NES evaluation on the program, CNS convened an anomalous unit (AU) determination meeting. The AU determination team, consisting of a representative from process engineering, CNS NES, and the design agency, determined that the unit was in an AU configuration, given that the last NES evaluation did not evaluate the acceptability of this test failing and that a NES rule requires the MSAD be electrically verified to be in the safe position. While the resident inspectors agree with the outcome of the AU determination meeting, it is not clear if all AU determination team members are utilizing the same AU criteria to support their decision, as defined by DOE Order 452.2E. Operations on the unit remain paused as NNSA, CNS, and the design agency determine the path forward.

Qualified Containers: CNS continued their inspections and analysis of the obtained data related to corrosive degradation of the exterior cans on a number of AL-R8 sealed insert (SI) containers (see 5/19/17 and 5/26/17 reports). Following the declaration of a potential inadequacy of the safety analysis last week, CNS implemented an immediate compensatory measure to restrict the movement of the pit type with the highest heat generation rate. While all of the containers identified with holes, preventing the container from meeting its required safety function, hold the same, high heat output pit type, six containers holding other pit types were identified since 2011 through the formal surveillance program to have corrosion, in varying degrees deemed acceptable by the surveillance criteria. The accident analyses for which the AL-R8 SI containers serve as a credited design feature, and the provisions of the surveillance plan used to implement in-service-inspections required by the safety basis, are applicable to all pit types and do not make performance distinctions based upon pit type or heat generation rate. Additionally, CNS has not yet determined a conclusive causal mechanism for the corrosive degradation that would allow them to conclude that the presence of severe degradation is limited to only the highest heat generation pit type. The resident inspectors note that the available surveillance data does not provide complete evidence for a conclusive determination that the corrosion is limited to a single pit type; this emphasizes the importance of applying a robust set of conservative compensatory measures to provide an additional level of protection for all pit types, currently not in place. The resident inspectors have communicated this position to CNS and NPO management. CNS has stated that they will continue to evaluate additional surveillance data, as they are obtained, using their approved processes for evaluating new information. No AL-R8 SI inter-zone moves have occurred since the corrosion problem was identified, however, all containers are authorized for moves excluding those containing the highest heat generation pit type. CNS is developing an initial sampling strategy.