

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 7, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: Christopher Berg, Acting Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending May 7, 2021

Operating Procedures: During vacuum chamber operations on a joint test assembly, production technicians and engineers identified that the assembly was missing tracer gas necessary to conduct the specific process. At the investigation for this incident, participants noted the event resulted from missing procedural steps. Specifically, in 2019, Pantex decided to remove certain tasks from the bay operating procedure and incorporate them into the vacuum chamber procedures. However, CNS personnel acknowledged that the procedural steps were removed from the bay procedure but not subsequently added to the other processes. Participants identified factors contributing to this incident, including the following:

- (1) Incomplete distribution of documentation—such as transmitted design agency evaluations—across pertinent Pantex organizations to ensure all required personnel are aware and take appropriate action; and
- (2) Limited scope associated with independent reviews of procedural modifications and the ability of such reviews to detect this error.

CNS plans to evaluate these areas during the causal analysis to determine any necessary improvements to prevent future recurrences, which could affect joint test assembly or nuclear explosive operating procedures. For this event, CNS process engineering plans to modify the applicable vacuum chamber procedures to capture the missing steps and allow the production technicians to proceed forward with the activity.

Issues Management: Pantex has experienced five recent events affecting its infrastructure organization, highlighting deficiencies associated with conduct of operations, work order planning, and work order execution. Two incidents involved the installation of components by craft workers that were not authorized in the current work orders (see 4/23/21 report) and a hazardous energy control procedure violation—i.e., performance of a lockout/tagout (LOTO) process inconsistent with the approved work order. Additionally, last week, while cutting into high pressure fire loop piping to support lead-in replacement activities, subcontractors noted a significant amount of released water, despite the piping being within the LOTO boundary. At the event investigation, participants indicated that this event resulted from water ingress through one of the closed and locked valves constituting the LOTO boundary. Generally, this leakage is not a concern as the workers verify absence of energy within the boundary (i.e., check for flowing water to determine valve closure status). However, per their process, workers could manipulate additional valves within the LOTO boundary and were not required to return them to the open position. As a result, a certain valve was left closed between the leaking valve and the absence of energy verification point. This point was therefore isolated from the leak, preventing a meaningful energy verification, and allowing water accumulation between the two valves. As a corrective action, CNS committed to perform an extent of condition review to identify other tasks that may have a similar concern in its LOTO process. Furthermore, CNS plans to conduct causal analyses to address the deficiencies highlighted by these multiple events.