

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 18, 2019

TO: Christopher J. Roscetti, Technical Director
FROM: Zachery S. Beauvais, Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending January 18, 2019

DNFSB Staff Activity: J. Parham augmented the resident inspector coverage by observing a radiation safety drill and reviewing lightning protection controls. The DNFSB staff held a teleconference on a recently implemented safety basis supplement for legacy issues.

Emergency Management: CNS Emergency Management conducted a series of training drills over the previous two weeks. These included two drills testing the radiation safety department response to tritium release scenarios in nuclear explosive bays and nuclear material staging areas. In both of these drills, radiation safety department (RSD) personnel demonstrated their proficiency with tritium detection equipment and correctly distinguished the difference in response actions for the respective areas. The drill scenario performed in the nuclear explosive bay included a personnel injury requiring paramedic response. Fire department personnel who responded to the scene did not use contamination barriers to prevent the spread of radiological material while transferring the potentially contaminated patient. RSD had not drilled their response to tritium events in several years. Following the drills, RSD requested additional drills. The emergency management department conducted a separate drill, involving an explosion in a non-nuclear facility and a related chemical spill, to train the emergency response organization (ERO) on recovery actions following a sitewide emergency. The ERO developed a re-entry plan for the impacted facilities, utilizing a re-entry checklist that has not been previously used at the Pantex Plant. Emergency Management personnel and ERO recovery team members held valuable discussions on potential improvements to this process. The Board's staff has previously commented on the need for established protocols to ensure that personnel making re-entry to impacted facilities have proper training.

Legacy Safety Basis Issues: CNS safety analysis engineers (SAE) identified three hazard scenarios encountered during disassembly operations on one weapon program that are not adequately controlled. Two scenarios, involving indirect lightning hazards during subassembly transfer operations and internal charge generation, could result in high order consequences. One scenario, involving tooling drops, involves low order consequences. CNS has paused operations on the weapons configurations where these hazards are encountered. CNS engineers, the weapons design agencies and NNSA are developing a path forward. The scenarios were discovered as part of an ongoing extent of condition evaluation for hazard scenarios with no controls that are dispositioned by low probability arguments (see 9/28/18 report).

Disassembly Operations: While performing disassembly operations, production technicians identified a damaged detonator cable and paused operations. Subject matter experts from CNS nuclear explosive safety, process engineering and SAE determined the unit was safe and stable without further actions. Prior to the step where the damage was identified, the detonators had been verified to be in a safe position. CNS SAE determined the configuration results in a potential inadequacy of the safety analysis, applicable to the single unit. CNS engineering has requested additional weapon response information from the design agency to continue disassembly. CNS safely dispositioned a similar issue in 2017 (see 10/13/17 report).