

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 16, 2018

TO: Christopher J. Roscetti, Technical Director
FROM: Zachery S. Beauvais and Christopher M. Berg (acting), Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending November 16, 2018

DNFSB Staff Activity: C. Berg, A. Hutain, and M. Helfrich observed and evaluated the emergency management exercise and provided additional onsite oversight.

Emergency Exercise: The Pantex emergency exercise scenario involved the explosion of a fictitious weapon in a nuclear explosive bay, puncture of a special nuclear material packaging container within a ramp, and a subsequent medical event involving a member of the emergency response organization (ERO). The acting resident inspector and headquarters staff evaluated the response of the following: fire department, radiation safety, and consequence assessment personnel; the plant shift superintendent; the offsite field monitoring team; and the emergency operations center. Compared to previous exercises (see 8/26/2016 and 4/20/2018 reports), DNFSB staff members noted improvements in fire department and radiation safety response and coordination, as well as continual advances in the offsite field monitoring capability. Of note, the exercise involved actual wind conditions, which directed the simulated radiological material plume over the new administrative building. Exercise participants and the DNFSB staff acknowledged the need for improved contingency plans for this situation—many members of the ERO could not leave the administrative building and report to the emergency operations center.

Planned Safety Improvements: During a Board member onsite visit in late February 2018 (see 3/2/2018 report), CNS identified planned safety improvements, including accelerated efforts to update the Pantex probabilistic seismic hazard analysis (PSHA) and replace the wood framed false ceilings in two nuclear explosive cells. CNS has deferred the cell upgrade project to fiscal year 2020, but does plan to commence efforts to update the PSHA this fiscal year.

Nuclear Explosive Safety Change Evaluation (NCE): A nuclear explosive safety study group (NESSG) convened to evaluate continued electrical testing and disassembly of two nuclear explosive units that previously failed an electrical resistance test. The failed test results could indicate that hazardous material, normally contained within the unit, could be in a more vulnerable state. To address this potential hazard, CNS process engineering and the design agencies developed a process whereby production technicians (PT) will perform disassembly operations in full-face respirators and anti-contamination suits. While the PTs are trained to use respirators, the normal process does not dictate their usage. The acting resident inspector observed process demonstrations and presentations conducted to support the NCE. The proposed disassembly operations are substantially identical to the normal process, except for the additional personal protective equipment and a new category 2 tester for hazardous material detection. In addition, the process calls for the repeat of the failed electrical test at a different tester resistance range. The study group and acting resident inspector considered hazards related to electrostatic discharge, hazardous material incompatibility, and PT communication difficulty. Of note, the respirators do create an environment for more challenging communication between PTs; however, demonstrations highlighted the ability for PTs to conduct operations with satisfactory execution of reader-worker-checker protocol. The NESSG identified no findings, deliberation topics, or minority opinions against the proposed disassembly process.