DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 8, 2019

TO: Christopher J. Roscetti, Technical Director
FROM: Zachery S. Beauvais, Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending February 8, 2019

DNFSB Staff Activity: K. Herrera and C. Berg augmented the resident inspector coverage by observing an emergency exercise and performing walkdowns of nuclear explosive areas.

Safety Basis: NPO and the NNSA Office of Safety, Infrastructure and Operations (NA-50) evaluated and approved key modifications to the Pantex safety basis. NPO and NA-50 approved safety basis re-writes for two weapon programs, developed in preparation for an upcoming warhead Alt and a gravity bomb life extension program, and an addendum to the transportation safety basis that addresses all weapon programs. The safety basis addendum acknowledges that seismic events postulated to occur during various onsite transportation activities do not have a viable control strategy to prevent or mitigate offsite dose consequences to below the evaluation guideline (see 2/1/19 report). NNSA invoked the exigent circumstances provision in the safe harbor standard, requiring elevated approval to accept the residual risk. The safety evaluation report, prepared jointly by NPO and NA-50 personnel, includes conditions of approval requiring CNS to verify frequencies, verify time-at-risk factors and to substantially upgrade deficient transportation facilities within the next eighteen months. Approval of safety basis modifications for the two weapon programs was contingent on approval of the transportation addendum. In their evaluation of the warhead program safety basis, NPO identified additional conditions of approval related to control application and evaluation, ongoing corrective actions for legacy issues and identified deficiencies with supporting safety analysis reports. In their evaluation of the bomb program safety basis, NPO identified conditions of approval related to tester safety and special tooling performance criteria, in addition to the transportation issues discussed above.

Emergency Management: The plant conducted an emergency exercise simulating the release of tritium from a dropped reservoir with a potential fire. The exercise was initiated by an operational scenario that tested production technicians' (PT) knowledge of their response procedures. CNS emergency management included an actual power loss to the operations center, actual tritium and fire alarm notifications to the plant shift superintendent (PSS), and the use of real wind conditions in the exercise plan. These additions improved the exercise realism. The resident inspector and staff members noted the following: (1) PTs were aware of smoke and sparks, per the scenario, but did not activate the manual fire alarm pull box; (2) PSS appropriately classified the event and initiated protective actions in a timely manner; (3) fire department response was complicated by incomplete notification of all necessary information (e.g., activation of fire alarm); (4) radiation safety department response was more timely than previous exercises; and (5) exercise artificialities led to delayed recall and limited safe route information being provided to all emergency response organization members. Overall, the event was sufficiently challenging, and exercise participants subsequently self-identified a number of opportunities for improvement, including those noted above.