DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 24, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: A. Gurevitch, M. Bradisse (acting), and C. Berg (acting), Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending December 24, 2021

Board Recommendation 2019-1: Earlier this month, NPO approved a safety basis change package converting several credited key elements of safety management programs (SMP) into specific administrative controls (SAC). This safety basis change addressed a concern laid out in Board Recommendation 2019-1, *Uncontrolled Hazard Scenarios and 10 CFR 830 Implementation at the Pantex Plant*, which noted that relying on SMP key elements does not provide a level of protection equivalent to SACs. In the implementation plan for the Recommendation, NNSA committed to revise the safety basis to ensure that SMPs are not credited to prevent or mitigate high-order consequence scenarios (i.e., inadvertent nuclear detonation or aerosolized dispersal). To meet this commitment, Pantex converted ten SMP key elements from three weapon programs into credited SACs, and revised the associated technical safety requirements and hazard analysis reports for those weapon systems. Further, one SMP key element was removed from the safety basis entirely, as it was not being credited to prevent or mitigate any specific scenario. The Sitewide Safety Analysis Report was also revised to remove references and pointers to key elements. With the approval of this safety basis change package, the Pantex safety basis no longer contains any credited SMP key elements for high-order consequence scenarios.

Safety Basis: Last week, a piece of chain tensioner from a roll-up door broke off and fell to the floor. Two of these doors are located across from each other on either wall of a passageway used to transport nuclear explosives, and can be opened to allow traffic to move across the passageway. This passageway and associated appurtenances are credited in the safety basis to remain in place in all scenarios up to and including design basis seismic events; consequently, falling pieces of the door mechanism represented a safety basis noncompliance. The previous in-service inspection of the roll-up door revealed nothing unusual regarding the mechanism integrity. As corrective actions, CNS will repair the door and issue a non-conformance report.

Fire Protection: Last week, while performing preventive maintenance on ultraviolet (UV) fire detectors in a nuclear explosive bay, personnel discovered that one of the detectors was out of alignment. The facility was in maintenance mode and no nuclear material was present. Participants at the event investigation categorized the situation as a performance degradation of safety system when it was not required to be operable, and committed to detector realignment work as a corrective action. It was also noted that this detector was not flagged as misaligned during the previous year's annual maintenance activities. At the critique, when the resident inspectors inquired as to the potential causes of the misalignment, CNS personnel stated that the cause had not yet been identified. CNS is currently working a campaign to replace UV detectors in nuclear facilities with newer infrared detectors and associated mounting equipment; however, this campaign will take several years to complete, leaving many UV detectors and their alignment equipment in the interim.