

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 16, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: Christopher Berg, Acting Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending April 16, 2021

DNFSB Staff Activity: The staff conducted a review on Pantex facility material limits, as well as material movement and pit staging requirements.

Seismic Activity: The United States Geological Survey recorded a 4.3 magnitude earthquake approximately 50 miles northeast of the Pantex Plant. The Pantex Operations Center received no reports of seismic activity experienced by onsite personnel. Additionally, CNS reported that the onsite seismic monitoring equipment was operational and did not record any seismic activity.

Safety Basis: In early 2019, to support continued operations, NPO and the NNSA Office of Safety, Infrastructure and Operations (NA-50) approved a safety basis addendum, which acknowledged that seismic events postulated to occur during various onsite transportation activities did not have a viable control strategy to prevent or mitigate offsite dose consequences to below the evaluation guideline. NNSA invoked the exigent circumstances provision in the safe harbor standard, requiring elevated approval to accept the residual risk (see 2/1/19 and 2/8/19 reports). CNS structural engineer walkdowns confirmed that key sections of the ramps and the primary loading dock—used for receipt of nuclear explosives in Zone 12—were not qualified to withstand a design basis seismic event. The structural engineers also identified that certain ramp appurtenances were not qualified to remain in place following such an event.

Over the past two years, CNS made several noteworthy safety improvements to address these seismic hazards, including (1) structural modifications to allow the qualification of certain ramps and the primary loading dock for a design basis seismic event, (2) evaluations and modifications to address concerns with ramp appurtenances, and (3) the seismic qualification of forklifts used in nuclear explosive transportation operations.

NPO approved a CNS safety basis change package, allowing the aforementioned safety basis addendum to be archived. The change package control strategy includes the above improvements, as well as the use of enhanced transportation carts (ETC) to prevent and/or mitigate impacts to explosive and nuclear explosive configurations during seismic events. For certain seismic-induced impact hazards, such as from a utility pole, the change package takes credit for the robustness of the nuclear explosive and associated packaging when being transported without an ETC. In the coming years, Pantex plans to replace these utility poles with structures that will be appropriately qualified for seismic and high wind events.

Fire Alarm Receiving System (FARS): Last week, the Emergency Services Dispatch Center (ESDC) experienced an issue with the FARS, requiring a switch to the backup server. Due to the resulting interruption in ESDC personnel fire alarm monitoring, CNS declared the event as a performance degradation of a safety system when it is required to be operable and entered the appropriate limiting conditions for operation for the affected facilities. CNS has encountered a similar issue with the FARS in the past and continues to investigate the cause of these faults.