

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 26, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: Miranda McCoy, Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending February 26, 2021

Staff Activity: C. Berg observed portions of a nuclear explosive safety (NES) operational safety review and performed walkdowns of weather-impacted areas.

Inclement Weather: CNS conducted an event critique covering several of the damaged facility systems from last week's extremely cold weather (see 2/19/21 report). During the critique, CNS facility management identified that the site had experienced freeze-related failures in ten nuclear facilities, as well as over fifty balance of plant or explosives facilities. CNS has resolved over half of these issues. Of note, CNS had conducted required freeze protection measures, including ensuring doors and windows were shut and area heating was operable; however, these measures did not prevent many freeze-related failures. The Pantex fire department was notified of several of the failures via properly functioning water flow alarms or trouble alarms. Among other corrective actions, CNS committed to reviewing historical beyond design basis evaluations to determine whether cold weather events had been considered and documented.

Operations: Earlier this month, production technicians performing disassembly operations encountered an error message from an electrical test and entered their immediate action procedure (see 2/19/21 report). This week, a group composed of CNS engineering, CNS nuclear explosive safety, and design agency personnel determined that the unit did not constitute an anomalous unit. The group made the determination after evaluating information that indicated the tester software had an incorrect—but conservative—setpoint for test failure provided by the design agency. Upon evaluating electrical test data to the criteria for a successful test, it was determined that if the tester software setpoint were correct, the unit would have passed the electrical test. CNS determined the event did not require an immediate extent of condition review; however, the resident inspector notes that the event calls into question tester software setpoints, which may warrant consideration for other testers. NNSA currently does not include software as a standalone NES master study. CNS is developing a path forward for the unit, which NNSA will evaluate via a NES change evaluation.

Facility Hazard Categorization: Earlier this month, CNS issued a stop work event for several bays due to an error in the application of the nuclear criticality safety analysis, which was used to demonstrate that criticality is precluded and the operations are not Hazard Category 2. CNS subsequently published two reports identifying that a criticality accident was precluded by the nature of the processes, allowing operations in certain facilities to resume. One of the reports—related to canned subassembly re-acceptance operations—concludes with categorizing the facility and associated operations as less than Hazard Category 3. The Board's staff members note that the report discusses the fire protection program (e.g., control of transient combustibles), as well as the fire suppression system, facility structure, and conduct of operations program, to support this conclusion. DOE Standard 1027 specifically notes that during the evaluation of the nature of the process to determine the credibility of a criticality event, credit may not be taken for engineered or administrative controls. CNS transmitted this report to NPO for their awareness.