

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 17, 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 September 17, 2021

Staff Activity: D. Andersen and M. Wright were onsite to conduct structural, seismic, and fire protection system walkdowns with resident inspector, NPO, and CNS personnel. Pit staging, surveillance, and repackaging activities were also observed and discussed.

A resident inspector attended Nuclear Explosive Safety Study Group meetings this week where the group assessed emerging information for a particular weapon program (see 9/10/21 report). Discussions centered on the response of a safety component to normal and abnormal conditions during certain operations at Pantex.

The resident inspectors and members of the Board's staff met with CNS personnel to discuss the status of corrective actions to address concerns related to conduct of operations, training, and organizational culture outlined in a June 9, 2021, Board letter.

Electrostatic Discharge (ESD) Event: CNS continues to investigate mechanisms resulting in the ESD event that occurred in a nuclear explosive cell two weeks ago (see 9/3/21 and 9/10/21 reports). This week, CNS developed a testing plan for initial and reacceptance of radiation-shielding aprons for use in electrostatic dissipative environments. The testing protocol involves charging the apron to 25 kilovolts, placing a grounding electrode in proximity to—but not touching—the apron, and verifying no electrical discharge occurs to a grounding electrode. CNS personnel tested radiation-shielding aprons, and physically tagged those that passed and were available for use. CNS resumed operations on two weapon programs, using radiation-shielding aprons that passed the reacceptance testing and a specially authored nuclear explosive engineering procedure.

Further, CNS safety analysis engineering (SAE) declared a potential inadequacy of the safety analysis for the ESD event. As an operational restriction, for two different weapon programs, including the program on which the event initially occurred, CNS prohibited the use of radiation-shielding aprons that can cause an ESD event. Additionally, CNS still plans to remove the high explosive mat from the nuclear explosive facility where the ESD event took place, and will test the conductive properties of the mat to assess its contribution to the incident.

Commercial Grade Dedication (CGD): Due to a previous investigation, CNS procured new limit switches for a nuclear explosive facility hoist. During CGD inspection activities on these switches, special tooling inspection department personnel verified the thread size using an uncalibrated gauge, contrary to procedural direction. Due in part to insufficient documentation on the CGD report, CNS did not recognize this discrepancy during subsequent evaluations. However, during a CGD process assessment meeting, NPO identified the issue. At the event investigation and critique, participants identified various corrective actions, including acquiring calibrated thread gauges, briefing inspectors on requirements for calibrated equipment use and documentation, and performing an extent of condition review to identify similar occurrences.