

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 19, 2023

TO: Christopher J. Roscetti, Technical Director
FROM: C. Stott and C. Berg (acting), Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending May 19, 2023

Staff Activity: J. Anderson was on-site to assess an ongoing operational safety review (see 5/12/23 report). Additionally, D. Andersen, J. Anderson, J. Heath, and the resident inspectors conducted walkdowns of several defense nuclear facility fire protection systems and construction projects (e.g., high pressure fire loop lead-in replacement for the last nuclear explosive cell). The staff members also observed and evaluated operations within various nuclear explosive and special nuclear material facilities.

During these walkdowns, the staff members identified a leaking compressed air line within a nuclear explosive cell, as well as a few fire sprinklers within a special nuclear material facility that were either damaged or in an incorrect orientation. The staff members relayed these observations to NPO and CNS personnel, who are actively evaluating the equipment.

Fire Protection: Last year, the DNFSB staff transmitted a document request to Pantex requesting additional information related to the fire sprinklers within a special nuclear material facility. As a result of this request for information, CNS identified an error within one room of the facility where fire sprinkler heads consisted of both quick response and standard response designs. Consequently, CNS executed a work order to replace all affected sprinklers within this location with the quick response design.

This week, members of the DNFSB staff examined the replaced sprinkler heads and reviewed the sprinkler replacement work package. While the orientation and type of sprinkler heads in the field are appropriate, the staff members identified that the work package inappropriately switched the locations of certain pendent and upright fire sprinklers. In 2022, the staff members identified a similar discrepancy in the work package for a sprinkler replacement in a different special nuclear material facility, which resulted in the issuance of a nonconformance report.

35-Account Material: Last month, CNS found that certain high explosive mats—believed to be procured from one production lot—may in fact come from multiple lots (see 4/21/23 report). During the event investigation, CNS participants determined that the mats were accepted into Pantex inventories without the proper certificate of conformance documentation, which certifies the provided material is from a single production lot. These high explosive mats are credited within the safety basis for their electrostatic dissipative (ESD) properties. Therefore, while Pantex personnel did test the ESD properties of some of these high explosive mats—to ensure the material met safety basis requirements—CNS could not assert that these testing results were applicable to all the procured items.

As an immediate corrective action, CNS prevented further use of the affected mats and, during the event investigation and critique, formally categorized the incident as a safety basis noncompliance. Furthermore, CNS concluded that through additional ESD testing, the affected mats could be determined as acceptable for use and reintroduced into operating facilities.