

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 31, 2023

TO: Christopher J. Roscetti, Technical Director
FROM: C. Berg, Acting Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending March 31, 2023

Staff Activity: M. Wright, D. Andersen, J. Anderson, C. Berg, and W. Dumayas conducted a teleconference with NPO and CNS personnel to address follow-up questions from the Pantex fire protection program review (see 4/1/22 report). Discussion topics included fire protection system performance metrics, impairments, and maintenance procedures; high pressure fire loop (HPFL) leaks; and ongoing Technical Safety Requirement (TSR) changes for fire protection controls.

Electrical Equipment: Earlier this year, production technicians encountered a failed electrical test on a nuclear explosive. When evaluating potential causes of the failed test, CNS and design agency personnel determined that the drawing for the electrical test—and consequently the nuclear explosive operating procedure—identified an incorrect cable connection (see 3/3/23 report). In response, CNS conducted an extent of condition review to ascertain all units at Pantex that were processed using the inaccurate procedure. At the current time, CNS has identified all affected nuclear explosives and provided the design agency with the associated electrical test data from these units. Through reevaluation of the data, design agency personnel validated that the units currently on-site did pass the intended electrical testing and do not present a safety or quality concern. The design agency is actively assessing data from the remaining affected units, and preliminary results indicate no further concerns. In addition, CNS revised the drawing and procedure for the electrical test to resolve the discrepancy and allow continuation of these operations. For those units where nuclear explosive operations were paused as a result of this issue, CNS developed a nuclear explosive engineering procedure to permit resumption of these activities.

Nuclear Explosive Operations: While conducting disassembly activities within a cell, the production technicians found that the workstand supporting the unit would not function as designed and would not allow continuation of operations. The nuclear explosive is in a safe and stable configuration; however, the workstand trunnions will no longer adequately raise and lower the unit. Furthermore, given the trunnion issues and the unit configuration, CNS could not implement straightforward recovery actions as utilized with previous workstand problems (see 12/9/22 report). Consequently, CNS Process Engineering is developing a nuclear explosive engineering procedure to (1) remove the unit from the workstand using the existing special tooling and facility hoist, (2) switch the workstand with an operational copy, and (3) place the unit into the new workstand. CNS is also developing a safety basis supplement for NPO review—and scheduling a nuclear explosive safety evaluation—to authorize these operations.

Fire Protection: Last week, one diesel fire pump for the HPFL unexpectedly started, resulting in CNS Facility Management entering the appropriate Limiting Condition for Operations (LCO). The next day, CNS personnel identified a leak on the fire suppression system for a non-nuclear facility within Zone 12 that led to the pump activation and closed the necessary valves to isolate the leak. CNS Engineering subsequently verified that the HPFL system leak rate was below its operability limit per the TSRs and exited the LCO.