

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 5, 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 5, 2023

Staff Activity: Per the Technical Safety Requirements, the high pressure fire loop requires two functioning diesel fire pumps—each with its own water supply tank—for the system to be operable. To determine diesel fire pump operability, CNS prescribes multiple surveillance requirements, including an annual requirement to conduct a flow test to verify adequate pump performance. The resident inspectors observed CNS perform this pump surveillance activity. Initial pressure and flow data obtained during the test indicates proper system performance.

Conduct of Operations: Last month, while conducting mass properties operations on a unit, production technicians acquired center of gravity measurements that exceeded allowed tolerances. In response, CNS Process Engineering developed a nuclear explosive engineering procedure (NEEP) to permit the technicians to assess the configuration of various components within the unit. While executing this procedure, the technicians identified a component had been inadvertently fastened in an incorrect location—most likely due to personnel transposing location values when installing the component using a torque sequence template. CNS is developing a second NEEP to correct the discrepancy via partial unit disassembly and rebuild.

Previously, for a different unit on this same weapon program, production technicians identified that they had not completed a section of the nuclear explosive operating procedure, which included an electrical test of a certain component, prior to moving into the subsequent operating procedure (see 4/28/23 report). As an immediate corrective action, CNS required all technicians on this weapon program to complete the computer-based *conservative decision-making refresher course*. Additionally, CNS plans to conduct a causal analysis and develop additional corrective actions to prevent event recurrence.

Nuclear Explosive Operations: Earlier this year, while conducting disassembly activities within a cell, technicians identified that the workstand supporting the unit would not function as designed—i.e., the workstand trunnions would no longer adequately raise or lower the unit (see 3/31/23 report). Last week, NPO approved the CNS safety basis supplement associated with the proposed recovery process, which included hoisting the unit out of the workstand and replacing the equipment with an operational copy. Overall, NPO found that the safety basis supplement provided reasonable assurance of adequate protection to the public and workers; though, NPO offered one directed change to ensure CNS credits special tooling utilized during the hoisting as a compensatory measure for certain tripping technician hazard scenarios. Additionally, NPO transmitted to CNS the nuclear explosive safety (NES) study group evaluation of the proposed recovery process (see 4/21/23 report). Within this memo, NPO authorized commencement of the proposed activities, concluding that the operations satisfy the NES standards and requirements.

This week, CNS successfully executed the workstand replacement NEEP, allowing further disassembly of the nuclear explosive. Initial assessments by CNS personnel of the degraded workstand indicate that a stuck gear within the base of the equipment led to the issue.