

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 10, 2023

**TO:** Timothy J. Dwyer, Acting Technical Director  
**FROM:** A. Holloway, C. Stott, and C. Berg (acting), Resident Inspectors  
**SUBJECT:** Pantex Plant Activity Report for Week Ending November 10, 2023

**Staff Activity:** J. Anderson and the resident inspectors observed and evaluated an emergency exercise at Pantex, as well as conducted various meetings with NPO and CNS personnel.

**Emergency Exercise:** This week, Pantex conducted a full participation emergency exercise involving a significant high wind event resulting in a simulated fatality and ramp collapse. The ramp collapse resulted in simulated personnel injuries, as well as special nuclear material release and personnel contamination due to the dropping of a weapon component in a nearby defense nuclear facility. CNS added realism by changing environmental conditions (i.e., wind speed and direction) throughout the exercise. Additionally, to further complicate the exercise, the scenario included one of the injured personnel going into simulated cardiac arrest at the site's medical facility. The resident inspectors and headquarters staff noted opportunities for improvement related to the scope of the term "facility" in the Emergency Action Levels for categorizing and classifying events, exercise control, and response practices to limit personnel contamination. At the exercise critique, site participants generally identified similar opportunities for improvement.

**Nuclear Explosive Operations:** During disassembly operations, production technicians discovered a component in an unexpected configuration within a nuclear explosive. CNS consulted the applicable design agency and, during the event investigation, indicated that the unexpected configuration should not result in any safety consequences. While the exact cause could not be determined, CNS stated that current site processes and requirements during assembly operations would preclude factors that likely contributed to the event.

CNS process engineering is developing a nuclear explosive engineering procedure to disposition the unit and permit continuation of disassembly operations. However, as noted during the event investigation, CNS will require formal documentation from the design agency—stating that current weapon response remains applicable for the unit—prior to publishing and executing this recovery procedure.

**Facility Appurtenances:** This week, during a general employee tour of the site, a CNS Facility Representative identified a water condensate pipe in the ramp overhead area moving due to water hammer, otherwise known as hydraulic shock. Water hammer occurs as a result of acute differential pressure changes in a moving fluid (e.g., when the fluid abruptly stops or changes direction). The Facility Representative discovered that a pipe hanger for the affected pipe was missing two fastener nuts. During further inspection of this pipe, CNS identified two additional pipe hangers with missing fastener hardware. During the investigation, CNS personnel stated that water hammer for this pipe appears to be stronger and more frequent. As CNS Facility Engineering could not assert that the pipe would remain in place during a seismic event, site personnel declared a safety basis noncompliance and blocked the ramp from material moves until the pipe hangers are repaired. CNS also plans to torque all hanger fasteners to proper specification and evaluate the cause of increased water hammer.