

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 18, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: J. Anderson and C. Berg, Acting Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending November 18, 2022

Staff Activity: J. Anderson, C. Berg, Z. Demeke, and K. Herrera observed the site's emergency exercise and evaluated responses from the fire department, radiation safety, plant shift superintendent, incident command, and emergency operations center. In addition, the acting resident inspectors and staff members met with NPO and CNS management, as well as conducted walkdowns of various nuclear explosive and special nuclear material facilities.

Emergency Management: CNS conducted a full-scale emergency exercise involving an explosion in a nuclear explosive cell, resulting in personnel fatalities and injuries, as well as the spread of radioactive contamination outside the facility. To further challenge emergency responders, the scenario also involved personnel contamination, shifting wind directions, and a simulated medical emergency involving one firefighter. Generally, the acting resident inspectors and staff members found that the site responded effectively to this challenging scenario. Following the exercise critique, the acting resident inspectors and staff members provided a few opportunities for improvement to NPO and CNS management, including observations related to radiation safety department response and certain communication challenges.

Readiness Assessment: Over the past month, NPO has conducted a federal readiness assessment (FRA) associated with plutonium metal repackaging operations (see 9/16/22 and 11/4/22 reports). This week, the FRA team briefed the CNS project team on its conclusions from the readiness assessment, which consisted of four pre-start findings, five observations, and two noteworthy practices. The pre-start findings included (1) inadequacies with the Startup Plan; (2) issues with procedure content (e.g., insufficient direction related to a potential vessel pressurization event); (3) inadequacies associated with control of radiological areas (e.g., contamination control); and (4) updates needed to special tooling documentation to ensure the tooling can perform its credited safety function. Notably, the FRA team also recognized the excellent communication practices displayed by the production technicians. The acting resident inspectors noted similar observations during operation demonstrations, including the effective communication practices and concerns with contamination control (e.g., skin contact observed with potentially contaminated surfaces). In conclusion, the FRA team found that the proposed operations should be allowed to commence upon closure of the pre-start findings.

Conduct of Operations: Earlier this month, CNS held an event investigation related to the use of incorrect material during nuclear explosive operations. Specifically, material handlers had inadvertently selected incorrect shimstock and had not performed an independent verification—as required per their procedure—to ensure material adequacy. Following shimstock processing, CNS personnel delivered the material for production use (see 11/4/22 report). In response to the incident, CNS took action to minimize event recurrence, including (1) briefing material handlers on independent verification requirements and (2) separating various shimstock materials and placing them in distinct staging locations to ensure correct material selection. Furthermore, CNS personnel plan to conduct a causal analysis and determine whether further actions are warranted.