DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 17, 2023

TO: Katherine R. Herrera, Acting Technical Director
FROM: C. Berg, Acting Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending February 17, 2023

Readiness Assessment: In 2022, NPO conducted a federal readiness assessment (FRA) associated with plutonium metal repackaging operations (see 11/4/22 and 11/18/22 reports). The FRA team concluded its assessment with 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. Of note, for these proposed operations, NNSA granted an exemption to specific quantity-distance requirements within DOE Standard 1212, *Explosives Safety*, and provided certain conditions of approval (e.g., prohibiting explosives within the facilities and limiting operations to only particular personnel). During its assessment, the FRA team found that CNS complied with these conditions of approval.

This week, the NPO Manager notified the Pantex Site Manager that CNS had satisfactorily resolved the pre-start findings and authorized the contractor to commence operations. Within the letter, the NPO Manager provided one directed action to ensure NPO is informed of any changes that could impact compliance with the DOE Standard 1212 exemption conditions of approval.

Nuclear Explosive Safety (NES): Earlier this month, CNS discovered a technical issue while performing nuclear explosive assembly operations in a cell. Specifically, the production technicians identified that the final height measurement obtained from the assembled configuration was out of tolerance. CNS placed the unit in a safe and stable configuration and subsequently devised a process to disassemble the nuclear explosive. The proposed nuclear explosive engineering procedure (NEEP) utilizes existing special tooling and a slightly modified process—compared to operations used by CNS on a previous unit with a cracked component (see 8/20/21 and 10/1/21 reports)—to disassemble the partially built configuration. This week, a NES study group evaluated the project team's proposal and identified no deficiencies or deliberation topics. NPO and the study group concluded that the proposed operations satisfied the NES standards and requirements.

Procedures: This week, CNS Process Engineering found that for multiple years on two weapon programs, site procedures had not implemented requirements (e.g., application of a primer) during replacement of certain pads on a weapon component. At the event investigation, CNS personnel noted that these requirements originated from the component manufacturer but had not been flowed down to Pantex from Sandia National Laboratories (SNL)—i.e., the design agency—via proper communication channels. Additionally, investigation participants highlighted multiple instances where SNL and Pantex should have identified the discrepancy (e.g., during development of the various NEEPs for pad replacements). At the current time, CNS is revising the procedures to implement these requirements and is conducting an extent of condition review to identify all units that may be affected.