DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 20, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: A. Gurevitch, M. Bradisse (acting), and C. Berg (acting), Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending August 20, 2021

Staff Activity: The resident inspectors observed a meeting of a nuclear explosive safety study group (NESSG) related to a proposed disassembly process for legacy units on a specific weapon program with a cracked component. Most of the discussions and demonstrations focused on a specific unit with a crack in this component, which has been staged in an enhanced transportation cart for several years. However, per the scope statement for this study, the procedures developed for the NESSG's consideration are intended to be considered for any unit from this program with a crack in that component. The NESSG will continue deliberations next week.

Conduct of Operations: Last week, during assembly operations on a warhead program using a recently revised procedure, production technicians did not perform required setup operations for an electrical tester. In the previous revision of the nuclear explosive operating procedure, a note stated that a required self-test of the electrical tester only had to be performed once per shift. The new revision removed that note, thereby removing the option to bypass self-test operations. The production technicians did not receive training on this revision and therefore were unaware of this change in expectations. As a result, when reaching that place in the procedure, the production technicians determined that, having already performed self-test operations on the tester twice, they did not need to perform it a third time and incorrectly marked the procedural steps as not applicable. Members of the Pantex quality organization identified this error.

The resident inspectors note that, despite weaknesses in the flowdown of these new expectations, adequate reader-worker-checker protocol—a core piece of disciplined operations at Pantex—should have prevented this event. During the event investigation and critique, participants identified corrective actions, including (1) briefing all applicable technicians on the specific procedure changes and (2) improving the procedural revision process and ensuring resulting changes are appropriately disseminated.

35-Account Material: Last week, CNS identified specific 35-account material—paint primer whose formulation had been changed by the manufacturer—was used for production activities without review and approval by safety analysis engineering (see 8/13/21 report). CNS subsequently declared a Stop Work Event and suspended all work using the 35-account material.

As a corrective action during the event investigation, CNS committed to conduct an extent of condition review to ensure additional 35-account material was not being used without an unreviewed safety question (USQ) review. During this evaluation, additional materials were identified that were released for production use prior to receiving USQ approval from safety analysis engineering. CNS revised the Stop Work Event to encompass these materials, preventing their use during production activities. Subsequently, safety analysis engineering reviewed the affected 35-account material and provided USQ approval, noting no new hazards resulted from the modified material characteristics. Following this approval, CNS released the 35-account material for production use, allowing operations requiring this material to resume.