

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 4, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: Mark Bradisse and Christopher Berg, Acting Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending June 4, 2021

Falling Technician Hazards: In 2013, during a nuclear explosive safety (NES) master study of the approved equipment program, a NES study group (NESSG) documented a finding against the static falling technician analysis. Specifically, the NESSG noted the assumptions in this analysis are not conservative and do not bound the hazard. To address this finding, Pantex undertook various improvement initiatives, and NNSA chartered a committee with participants from across the nuclear security enterprise that developed a dynamic methodology for this hazard. CNS also implemented a new suite of controls designed to reduce the likelihood of falling technician impacts during nuclear explosive operations in bays and cells (see 12/19/18 and 3/1/19 reports).

Based in part on the completed improvement initiatives and the additional work required to implement the dynamic methodology, the NNSA Office of Stockpile Management Standing Management Team unanimously recommended resources be allocated to other high-priority safety basis issues. Subsequently, in October 2020, the NNSA Associate Administrator for Safety, Infrastructure and Operations concurred with Pantex's approach for analyzing the falling technician hazard, and, this week, NPO approved the closure of the NESSG finding. The acting resident inspectors acknowledge the improvement efforts undertaken by Pantex, but note that the falling technician analysis—used in the development and assessment of special tooling—still utilizes the same static methodology as when reviewed by the NESSG in 2013.

NES Evaluations: This week, a NESSG conducted a NES change evaluation (NCE) for an anomalous unit with a cracked component (see 3/26/21 report). The proposed nuclear explosive engineering procedure (NEEP) uses special tooling in combination with 35-account material to stabilize the cracked component and allow technicians to safely disassemble the unit. The NESSG reviewed the NEEP and observed demonstrations of the disassembly process. The resident inspector noted that the NEEP was mature and demonstrations were well conducted.

In May, a NESSG conducted an NCE related to certain operations on a different program. The NESSG identified four deliberation topics (DT) for NPO's consideration. One of these DTs noted that hand lifts of high explosives could be conducted at reduced heights and recommended that certain tooling be adjusted during operations to facilitate this improvement. This week, NPO transmitted a memo to CNS requiring action on this DT, as well as an evaluation of other programs to incorporate these recommendations where similar processes are performed. Both NPO and the NESSG determined that the proposed operations satisfy the NES standards, but that action on the above item would serve to enhance NES and therefore should be implemented.

Charge Generation Hazards: In March, a NESSG evaluated proposed disassembly operations involving several new bonding controls to address internal charge generation hazards on another weapon program (see 3/26/21 report). Based on its evaluation of the proposed operations, the NESSG documented two findings and ten DTs. This week, NPO approved the actions taken and closure request for the two findings, as well as CNS's plan to address the one actionable DT.