

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 15, 2019

TO: Christopher J. Roscetti, Technical Director
FROM: Zachery S. Beauvais and Christopher M. Berg (acting), Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending February 15, 2019

Safety Basis: CNS safety analysis engineering declared a potential inadequacy of the safety analysis due to an identified discrepancy between the linear accelerator (LINAC) head weight documented in the safety basis versus a supporting technical analysis. As a result, the existing energies in the safety basis for LINAC head impacts may not be bounding. CNS did not identify any needed operational restrictions due to an existing specific administrative control, which requires technicians to intervene (i.e., trigger an emergency stop) to prevent an impact to the unit following failure of the LINAC manipulator control system. However, during a previous evaluation of a safety basis change package for a warhead program (see 2/8/2019 report), NPO identified that this control may be ineffective to prevent the impact. Based on NPO feedback, CNS committed to install rail stops as an engineered design feature to prevent potential impacts.

Nuclear Explosive Operations: Last week, CNS executed a Nuclear Explosive Engineering Procedure (NEEP) for a unit that had previously failed a test during disassembly (see 12/14/2018 report). Production technicians successfully re-performed the test using a different protocol to establish the condition of the unit, allowing disassembly to proceed under the normal process. On a different weapon program, CNS finalized and subsequently utilized a NEEP to safely remove a stuck pit tube valve on a single unit (see 1/11/2019 report).

The acting resident inspector and an NPO facility representative observed and evaluated nuclear explosive disassembly operations for one weapon program, as well as a CNS internal assessment of operations in a LINAC bay. While observing the disassembly operations, both individuals noted opportunities for improvement in conduct of operations and procedural content. The acting resident inspector and the NPO facility representative shared these observations with the applicable CNS production manager.

Stuck Setscrew: The resident inspectors walked down a nuclear explosive operation that was paused due to a stripped, stuck setscrew. To continue operations, CNS required a NEEP to remove and replace the setscrew from the unit. Using a non-typical process, the NEEP requires both production technicians and machine shop personnel to conduct the operation. Production technicians will maintain control of the area during execution, while machine shop personnel remove the setscrew using hand-operated tools as needed. At the time of this report, CNS had published, but not executed, the operating procedure.

Plutonium Staging Operations: In preparation for a new plutonium staging mission, CNS commenced readiness verification activities and submitted a safety basis supplement to NPO for review and approval. These operations will involve the use of a container type that is not currently employed at Pantex.