

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 2, 2024

TO: Katherine R. Herrera, Acting Technical Director
FROM: A. Holloway and C. Stott, Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending February 2, 2024

Nuclear Explosive Operations: Last week, during operations involving installation of a component cover, CNS production technicians noted that a ferrule detached during its application onto a safety cable. As the production technicians could not find the ferrule on the facility floor, CNS conservatively assumed the component fell into the unit. As a result, CNS paused operations and placed the unit into a safe and stable configuration. Subsequently, CNS developed and executed a nuclear explosive engineering procedure (NEEP), permitting partial disassembly of the nuclear explosive in an effort to locate the ferrule within the unit. As this first iteration was not successful, CNS plans to develop a second NEEP to further disassemble the unit in an attempt to locate and remove the ferrule.

Safety Basis: Last week, CNS declared a potential inadequacy of the safety analysis (PISA) upon discovery of discrepancies associated with electrostatic discharge parameters for operations on one weapon program. Specifically, for an electrically dissipative bag, the electrical capacitance was found to exceed the value currently listed in the safety basis. Due to the potential increase in the probability and consequence of a hazard scenario already evaluated in the safety basis, CNS determined the PISA represented an unreviewed safety question. CNS did not implement any operational restrictions due to an existing control deemed to adequately address the associated hazard.

Special Tooling: Last month, CNS production technicians discovered expired special tooling within a vacuum chamber facility. Per site procedure, the technicians applied a “do not use” tag to the affected tooling and removed it from the facility. Of note, unlike other tooling designs, this special tooling can be separated into two parts, only one of which has the tooling identification and preventive maintenance sticker applied listing the expiration date.

After retrieving a replacement copy from a nearby facility, the technicians noted that during operations, they are procedurally driven to separate the tool into its two parts. Furthermore, there can be multiple tooling copies available in a facility, presenting a traceability concern between the separated pieces. While technicians did not use expired tooling in this instance, given the traceability concern, they noted the potential for a tool part to be used beyond its scheduled preventive maintenance. As a result, CNS now plans to label each tooling part with its associated copy number to ensure traceability. Also, in the interim, CNS process engineering will procedurally limit the affected facilities to one copy of this tool.

Conduct of Operations: Certain nuclear explosive operations specify the use of 35-account material that is required to cure to a defined hardness. Typically, the operating procedure prescribes a hardness test of the cured material and an option tree depending on the results. While recently executing these operations, the technicians obtained a hardness value below the acceptable threshold but followed the procedural option for a satisfactory measurement, allowing further unit assembly. CNS and the design agencies are determining a path forward for this unit.