

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 17, 2023

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** C. Berg, Acting Resident Inspector  
**SUBJECT:** Pantex Plant Activity Report for Week Ending March 17, 2023

**Nuclear Explosive Safety (NES):** Late last year, Sandia National Laboratories (SNL) transmitted a Specification Exception Release (SXR) to Pantex authorizing the use of a non-conforming part within certain nuclear weapon stronglinks. Specifically, during the inspection process, Kansas City National Security Campus did not employ guard-banding—i.e., applying additional margin—when obtaining the diameter measurement from the center hole of the part. When including guard-banding values, SNL found that the diameter measurement for a small percentage of the parts exceeded the prescribed dimensional requirement from the component drawing. Due to this issue, within the SXR, SNL noted potential concerns with the ability of the stronglinks to perform their safety function. However, after further analysis, the design agency concluded that the parts are acceptable for use with no perceived impact to nuclear safety.

In January 2023, a NES study group convened to further evaluate the safety ramifications from the SXR and the underlying component concern. NPO transmitted to CNS the results from this NES change evaluation—i.e., zero deficiencies and two deliberation topics—last month. Of note, NPO and the NES study group identified no safety concerns resulting from the part dimensional non-conformance. Though, the study group did acknowledge concerns with the SXR review process and the limited communication of non-conformances to the NES community. Such communication is necessary to ensure design agency acceptance of a non-conformance does not impact assumptions relied upon during a previous NES evaluation. In its letter, NPO stated that while it is not within its purview to direct design agency action, the field office encouraged activity on this topic by the NNSA Office of Stockpile Management.

**Operational Safety Review (OSR):** In January 2023, a NES study group briefed NNSA management on its conclusions from the OSR for one weapon program (see 1/27/23 report). This week, NPO transmitted to CNS the results from the review and associated directed actions, which included the following:

- Finding One—deficiencies in the process for responding to Category One electrical equipment issues during an electrical test of a nuclear explosive. NPO directed CNS to address the conduct of operations and procedure adherence issues from the finding, as well as other examples provided within deliberation topics and senior technical advisor comments, via a causal analysis and corrective action plan.
- Finding Two—insufficient maintenance practices to meet NES requirements for certain Category One electrical equipment. CNS will add the equipment (i.e., a switchbox used with an electrical resistance tester) into the appropriate preventive maintenance program.
- Opportunity for Enhancement—lack of an end-to-end self-check on a certain electrical cable. CNS will provide NPO an action plan to incorporate this check for the equipment.

Overall, other than the two findings above, NPO and the study group found that the assessed nuclear explosive operations continue to meet the NES standards and requirements.