

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 7, 2023

TO: Christopher J. Roscetti, Technical Director
FROM: C. Berg, Acting Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending April 7, 2023

Nuclear Explosive Safety (NES): Per DOE Order 452.2, Category Two electrical equipment is not intended to connect to nuclear explosive electrical circuitry but instead may make mechanical connection to or come into contact with the unit. Pantex is required, by this same DOE directive, to maintain a record of such electrical equipment, including each specific asset and the associated nuclear explosive operations for which that electrical equipment is authorized.

Last week, CNS Metrology identified that the Pantex document that fulfills the above requirement—i.e., procedure P7-0804—no longer contained certain radiation safety equipment within the list of authorized Category Two electrical equipment. In immediate response to this discovery, CNS stopped using all radiation safety equipment within nuclear explosive areas for a few hours until the discrepancy could be corrected. At the event investigation, CNS personnel determined that the equipment had been inadvertently removed from P7-0804 approximately one year earlier during a modification of the procedure to eliminate certain outdated content. This procedure modification consisted of multiple proposed revisions generated across several weeks. However, each proposed revision contained different changes to the document, and, when evaluating the procedure modification prior to publication, CNS reviewers did not assess all the proposed revisions (i.e., they assessed the most recent revisions but not changes contained in the early submittals). As one of the earlier proposed revisions included this error, CNS reviewers did not identify the inappropriate removal of the radiation safety equipment.

CNS conservatively categorized the incident as an event that resulted in an adverse effect on NES due to the presence of unauthorized equipment. As a corrective action to prevent event recurrence, CNS plans to brief technical reviewers to ensure they remain cognizant of the suite of proposed changes when evaluating document modifications. Furthermore, CNS plans to verify maintenance work instructions and calibration procedures reference P7-0804, ensuring assets will be checked against the list of authorized electrical equipment prior to conducting preventive maintenance on them. CNS will utilize this approach to validate that P7-0804 contains the correct list of assets.

Safety Basis: Last week, NPO approved—with two directed changes—a safety basis change package related to the incorporation of multi-application transportation attachment device (MTAD) operations for a specific weapon program. Generally, the introduction of MTAD operations resulted in minimal changes to weapon response consequences and therefore limited required changes to the existing control suite. Of note, for two scenarios that resulted in increased low-order consequences, CNS Safety Analysis Engineering applied existing controls to prevent these postulated events. Additionally, CNS will still prohibit transportation activities for this weapon program during lightning warnings. However, the safety basis change package provided additional flexibility to conduct MTAD operations, proposing to allow these nuclear explosive operations in locations currently not designated for such activities. A NES study group convened this week to evaluate these proposed operations.