

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 14, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Zachery S. Beauvais and Miranda McCoy, Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending February 14, 2020

Nuclear Explosive Cell Structure: As part of an ongoing project to replace the high pressure fire loop lead in for a nuclear explosive cell, construction subcontractor personnel placed concrete in floor pits. The resident inspectors observed activities at the onsite batch plant, quality assurance testing of the concrete at the construction site, and placement of the concrete. Subcontractor personnel prepared an initial batch; however, a CNS project engineer identified a discrepancy with the initial batch mix at the construction site, prompting CNS engineering management to appropriately reject the initial batch. Subcontractor personnel prepared a second batch that matched the original specifications. It was confirmed to meet slump, temperature, and air content specifications. Subcontractor personnel prepared test cylinders to be tested for strength at various intervals over the next month. The resident inspectors did not identify any gross errors in the placement.

Immediate Action Procedures (IAP): Last week, production technicians (PT) entered their IAP following a failed electrical test on a unit. Per the IAP, PTs disconnected the electrical test equipment and replaced the cover. PTs then removed the test equipment from the vicinity and exited the facility with the test equipment. The appropriate CNS facility representative was contacted to restrict access to the facility, and nuclear explosive safety personnel determined that the unit, as well as an additional, unrelated unit present in the facility, were both in safe and stable configuration and issued an all-clear on the IAP. In order to gather data regarding the cause of the failed test, tester design engineers performed initial testing on the electrical tester and connector cable in the ramp outside the facility at the time of the event, and did not find issue with either. During the fact finding, PTs noted that they had performed a self-check of the tester, per their procedure, prior to testing the unit, and also found no issue with the tester. Metrology personnel are currently performing additional troubleshooting of the tester. CNS program management convened an anomalous unit determination meeting, at which the unit was declared anomalous. This week, Pantex safety analysis engineers declared a potential inadequacy of the safety analysis regarding the failed electrical test.

Technical Safety Requirement (TSR): While reviewing procedures in support of a safety basis change package, process engineers noted the most recent revision of a procedure for linear accelerator operations for one weapon program had not been published, and therefore changes made as part of a previous change package had not been included in the procedure implemented on the line. In particular, implementation of functional requirements for two specific administrative controls had been added to the procedure last year, but this revision of the procedure remained unpublished. Upon discovery of the event, CNS declared a TSR violation. In an immediate review of similar procedures, process engineers determined that procedural implementation of these functional requirements had been completed for all other weapons programs. CNS engineers initiated an extent of impact review to verify that all specific administrative controls resulting from change packages within the past year had been properly flowed into published procedures.