

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 24, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Miranda McCoy, Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending July 24, 2020

Two-Person Concept (TPC): Nuclear explosive safety requirements include TPC implementation to ensure no single individual has unrestricted access to a nuclear explosive or other crucial asset. Part of Pantex's implementation of TPC involves multiple keys for nuclear explosive facilities; keys are segregated such that individuals only have access to a specified set. Last week, CNS personnel noted that identification tags had been applied incorrectly to some keys, resulting in individuals having access to an incorrect subset of keys, and one individual possessing the full suite of keys that would allow lone access to a facility. CNS determined that the event constituted a violation of TPC.

CNS took immediate actions to ensure accountability of keys and nuclear material. Since the incident, CNS personnel modified the current process—and issued a revision to the associated work instruction—for key accountability to require verification of the key number, as opposed to verification via any other tags or labels. Personnel with key access were formally briefed on the work instruction. Over the past few years, CNS engineers have also been developing additional key accountability technology for use at Pantex. The proposed system is primarily aimed at increasing efficiencies in key management, but would also improve key accountability posture.

Fire Protection System: The water tanks and pumps servicing the high pressure fire loop experienced several issues this week. None of the events resulted in the site entering limiting conditions for operations. The Pantex technical safety requirements (TSR) specify two of the three tanks (and associated pumps) must remain operable, and in each of the following instances the other two tanks remained operable.

- A tank experienced a low water level alarm. In investigating the issue, facility engineers determined it to be a false alarm. The level alarm cleared without action later that day. However, shortly after, the high level alarm activated, and facility engineers determined that the tank's water level was above the high level alarm set point.
- During preventive maintenance activities related to TSR surveillance requirements, a pump failed to meet established flow test parameters. In the fact finding, facility engineers noted that due to the age of the pump, and the frequent testing at harsh churn conditions, wear and degradation of the pump was not an unexpected condition.
- During subsequent preventive maintenance activities, a different tank's pump failed the same surveillance requirement.

Safety Basis: NPO approved a justification for continued operations (JCO) for weapon response rule mapping discrepancies on one program. CNS previously implemented a NNSA-pre-approved measure to apply the existing personnel evacuation specific administrative control (SAC) for operations involving installation and removal of a protective cover (see 7/10/20 report). The JCO outlines the personnel evacuation SAC as one compensatory measure and production technician approach angles as second compensatory measure. Approach angles are already implemented widely at Pantex for preventing production technician trip events.