

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 9, 2018

TO: Christopher J. Roscetti, Technical Director
FROM: Ramsey P. Arnold and Zachery S. Beauvais, Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending August 10, 2018

Causal Analysis: Last week, the resident inspectors observed a causal analysis and mistake proofing meeting held to address a positive unreviewed safety question (USQ) determination related to inaccuracies in a preparation cart analysis. The inaccuracies were first identified in lines of inquiry developed by the Board's staff (see 6/22/18 report). During the course of investigating the initial issue, CNS tooling engineers identified that the safety basis and associated tooling analyses used an inaccurate weight for a special nuclear material component. Upon further evaluation, CNS safety analysis personnel determined that the weight of the component listed in the weapon safety specification (WSS) had changed significantly between revisions; however, this weight change was not incorporated into the safety basis or supporting tooling analyses. The WSS is controlled and released by the cognizant design agency.

The resident inspectors note similarities between this event and a 2017 TSR violation where CNS performed surveillance activities on special nuclear material components without the appropriate controls. That event stemmed from CNS implementing design agency surveillance specifications without performing an independent review to determine that such operations could be performed within the safety basis (see 2/10/17 and 3/24/17 reports). CNS is currently finalizing corrective actions for the preparation cart positive USQ determination. CNS tooling engineers performed an immediate extent of condition and found no other issues on the specific weapon program caused by the greater component weight. Both instances indicate potential weaknesses in the processes implemented to communicate changes in design agency documents to Pantex, as well as Pantex processes implemented to evaluate documents for changes that could affect the safety basis.

Weapon Response: CNS recently completed an extent of condition review to determine whether additional discrepancies existed between the design agency weapon responses and those in the Pantex safety basis (see 2/9/18 report). The review was conducted over the past several months and found more than 40 discrepancies. Based on the review, CNS declared a potential inadequacy of the safety analysis (PISA) last week—subsequently determined to represent a positive USQ—because many of the discrepancies resulted in the determination that the safety basis is not bounding. CNS implemented operational restrictions to apply the personnel evacuation specific administrative control and to perform applicable hoisting operations at a prescribed distance from the unit. Additionally, CNS declared a separate PISA on the same program related to a hazard scenario where no controls were present to prevent a pump fixture gouge to uncased conventional high explosives. As an operational restriction, CNS has paused the use of the pump fixture. CNS did not realize the PISAs existed until after completing the extent of condition review, rather than ensuring an adequate control set exists for each discovery of a weapon response discrepancy as they were identified.