

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 16, 2015

**MEMO TO:** Steven Stokes, Technical Director  
**FROM:** Thomas Spatz, Pantex Site Representative  
**SUBJECT:** Pantex Plant Report for Week Ending January 16, 2015

**Potential Inadequacy of the Safety Analysis (PISA) and Positive Unreviewed Safety Question (USQ) for Assembly Stand Step Height:** Consolidated Nuclear Security, LLC (CNS) declared a PISA when they discovered that the assembly stand step height on one weapon program did not meet the functional requirements in the Hazard Analysis Report (HAR). CNS categorizes the assembly stand as a safety-class design feature for accident scenarios where a cart is brought up to the work stand and can impact a nuclear explosive in the stand. In this accident scenario, the 95% man analysis results in a prescribed horizontal kinetic energy which is transferred to the cart being pushed. CNS determined that an assembly stand step height of 1 5/8" is the minimum step height to reduce the kinetic energy and keep the energy within the 95% tripping man analysis for the associated tooling. CNS has a functional requirement in the safety basis for this weapon program that states the assembly stand shall be designed with a base step height of at least 1 5/8". CNS does not have an in-service inspection in the Technical Safety Requirements, or pre-operation check, to verify that this functional requirement is met. CNS tooling engineers and authorization basis analysts discovered that the assembly stand step height did not meet the functional requirement while developing authorization basis change packages associated with a tooling upgrade project on this weapon program. The assembly stand base was modified several years ago to remove a non-conductive layer of material due to an electro-static discharge issue. CNS upgraded the PISA to a positive USQ determination due to the increase in the probability of a malfunction of equipment important to safety. CNS has paused operations involving the use of the assembly stand on one weapon program.

**Positive Unreviewed Safety Question (USQ) Determination for Electro-Static Discharge (ESD) Scenario Update:** In December 2014, CNS declared a positive USQ determination for ESD hazards on one weapon program. (See reports for 12/19/2014 and 12/26/2014.) This week, the Design Agency (DA) sent an Information Engineering Release (IER) formally transmitting weapon response information related to a particular subset of operations performed on this weapon program. The DA's weapon response values increased from the previous values for high-order consequences, mechanical releases, and worker safety. CNS sent a Justification for Continued Operation (JCO) to the NNSA Production Office to perform limited operations on units in the Ultimate User configuration. The JCO contains compensatory measures for the Production Technicians to use wrist straps to electrically bond at prescribed locations when performing these operations. NPO was preparing the Safety Evaluation Report to authorize operations at the time of this report.

**New Sylgard™ Pump Pressure Relief Device:** CNS Tooling Engineers designed a pressure relief valve into the air connector of the Sylgard™ pump. The recently approved safety basis change package includes two new Technical Safety Requirements to establish the upper pressure limit and calibrate the pressure relief cracking pressure, and one In-Service Inspection to annually verify the cracking pressure. CNS has closed the Justification for Continued Operations for Sylgard™ pump operations. (See reports for 5/23/2014 and 9/12/2014.)