

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 11, 2004

MEMORANDUM FOR: J. K. Fortenberry, Technical Director
FROM: T. Hunt and W. White, Pantex Site Representatives
SUBJECT: Pantex Plant Activity Report for Week Ending June 11, 2004

DNFSB Staff Activities: A. Matteucci was at Pantex this week providing site representative support.

Tooling Failures: While transferring a nuclear explosive from an assembly cart to a transportation cart (ETC-I), a mechanism that adjusts the height of the non-crank side trunnion failed. Specifically, a retaining washer in the raise/lower drive mechanism was deformed and breached by a retaining capscrew, allowing pieces of the drive train (pulley et al) to disengage and fall to the floor. The preliminary investigation indicates that the failure may be the result of an excessive application of force being applied to the drive train during the ETC-I transfer operation. Interim operational restrictions put in place require a tooling engineer to be present during transfer of loads between the two carts and tooling engineer evaluation in the event of abnormal conditions (e.g., unusual noise, binding, component misalignment). The failure of the non-load bearing component does not appear to have direct safety implications. Thirty-eight of the 51 assembly carts have been inspected for similar degradation, resulting in two carts being recalled.

Two other tooling failures this week resulted in suspension of certain operations. Two different copies of the same assembly stand failed to track up and down as designed. In the first occurrence, the unit had not yet been transferred to the stand when the hand crank jammed. In a similar incident, the nuclear explosive was installed in the stand before the trunnion malfunction. A special instruction will be developed to remove the unit from the stand and an engineering evaluation will be performed to determine the path forward. [I, E4]

Pit Shipping Containers: Pantex personnel have been trying to influence the design of the new pit shipping container but have not been entirely successful. They have requested that the approved process and container minimize cost and rehandling. They also believe that the sealed insert (SI) container should be an integral component in the chosen design. Two container options are currently under consideration. The MD-1 is the smaller of the two designs; requiring the pits currently stored in SIs to be removed and repackaged. The MD-2 consists of 3 major parts; the SI, containment vessel, and overpack. Apparent advantages of the MD-1 are that every component could meet current quality requirements and per unit cost is less. The MD-2 would minimize the repackaging effort, and thus significantly reduce worker radiation dose, but the SI component is currently not certified as an acceptable shipping container. Pantex developed the SI and will be one of the major users of the container but has not been intimately involved in the shipping container design. Although site personnel would prefer a modified MD-2 container be approved, it is possible the MD-1 will be favored due to cost and certifiability. [I, NA]

Tooling Tryout Facility: BWXT recently implemented a tooling tryout facility to assess new and modified credited tools and certain discretionary tools prior to issuance for use on weapons. In the first few months of operation, about 75 tools have gone through the evaluation process. Deficiencies were found in approximately 1/3 of the tools tested and most were returned to the warehouse for repair or receiving and inspection for further evaluation. Findings included missing, loose and broken parts, drawing errors, and parts that do not engage. [I, NA]