

September 25, 2001

General John A. Gordon  
Administrator of the National  
Nuclear Security Administration  
Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-0701

Dear General Gordon:

In May 2000, the Defense Nuclear Facilities Safety Board (Board) identified a potential safety issue regarding canned subassemblies (CSAs) for certain weapon systems that could undergo adverse reactions in a thermal environment. At that time, the Board levied a reporting requirement on the Department of Energy (DOE) to address this issue, and to consider potential short-term compensatory actions as required. The Board and its staff subsequently interacted with personnel from the Y-12 National Security Complex (Y-12), Los Alamos National Laboratory (LANL), and Pantex Plant to provide additional detail on these matters. DOE delivered a report on CSA response to abnormal thermal environments on June 5, 2001, and a revision on August 31, 2001. DOE's CSA report adequately addresses the Board's concerns.

During review of this matter, the Board's staff observed a number of ancillary facts that merit further attention. These are as follows:

- ! The Weapon Safety Specification (WSS) for the W76 has not been updated since 1999, and so does not reflect the recommendations contained in the CSA report. The WSS plays an important role in communicating hazards associated with nuclear explosive operations, and it is imperative that this document contain the most current information available. The WSSs for other weapon systems affected by the CSA issue should be updated as well.
- ! The Board's letter of May 2, 2000, addressing this issue observed that there is no evidence of fire testing of weapon systems that has included high-fidelity CSA mockups or other sensitive components. The CSA report notes this as well, and identifies the need for research in this area. DOE should ensure that this type of testing is

appropriately prioritized and performed to increase the weapon response knowledge base.

- ! The original issue of CSA thermal response arose from a comparison of safety analyses for Pantex and Y-12 performed by the Board's staff, as well as an accident involving similar materials at LANL. Y-12 had previously identified the possibility of adverse reactions due to overheating of the CSA, but these conclusions were not well communicated outside of Y-12. The lack of communication among sites within the DOE complex limits the ability to practice Integrated Safety Management on a broader scale, using feedback and improvement from one location to enhance safety at others. The Board therefore encourages DOE to facilitate communication of hazards and mitigation techniques across the complex.
  
- ! Emergency response to a fire involving weapons and weapon components is outlined in general terms in a classified Department of Defense (DOD) document entitled *General Firefighting Guidance for Nuclear Weapons* (TP20-11), last referenced in DOE Order 5480.7A, *Fire Protection*. Although this document is not referenced in the current set of DOE orders, it is used by fire departments at Y-12, the Rocky Flats Environmental Technology Site, and Pantex to plan fire response. The Board encourages DOE to work with DOD to review and update this guidance to incorporate the results of the CSA report.

Sincerely,

John T. Conway  
Chairman

c: Mr. Mark B. Whitaker, Jr.