[DOE LETTERHEAD]

February 20, 1998

The Honorable John T. Conway
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, N.W.
Suite 700
Washington, D.C. 20004

Dear Mr. Chairman:

Your letter of September 12, 1997, requested a detailed technical report describing the approach taken to ensure the adequacy of those engineered design features and administrative controls which provide lightning protection for operations involving collocated high explosives and nuclear material at Pantex. In accordance with the principles of the Integrated Safety Process, a Lightning Project Team (LPT) was chartered to develop the report. Your staff has been well-represented in discussions of this matter.

Although data and analyses gathered to date are consistent with information provided to the Board on July 18, 1997, I am not yet fully satisfied with the current effort. Additional discussions, analysis and potential experiments/modifications may be required that will require delaying submission of the report past the February 20, 1998, commitment. In this regard, a meeting has been set for the first week of March 1998, in Albuquerque. The Principal Deputy Assistant Secretary for Quality and Safety and I plan on attending. I expect that meeting to serve as a means of intensifying our efforts to better understand the lightning hazard, and establish controls necessary to mitigate it in the Pantex nuclear explosives areas (NEAs). We will focus on the topics summarized below:

1. The Faraday cage/isolation approach (bonding/surge suppression) for providing lightning protection currently being implemented, will continue.
2. Further improve the reliability of lightning protection provided in the Pantex NEAs, by evaluating the following areas:
    - Perform high-fidelity modeling of bays/cells;
    - Continue detonator vulnerability research and Lab lightning analyses;
    - Possible insulation/isolation for the voltages produced by unbonded penetrations;
    - Enhance lightning detection/warning capabilities and integrated safety management controls;
    - Evaluate weapons operations for lightning safety (i.e., minimizing the hazard exposure time by modifying assembly/disassembly processes);
    - Enhance existing lightning protection systems/perform a "poles" analysis;
    - Install protective devices that can be employed to provide protection at the weapon, rather than facility level; and
    - Conduct a workshop of lightning experts.

The hazard presented by lightning to the weapon systems stored in Zone 4 West, as well as

any necessary additional lightning protection enhancements will be addressed when the LPT evaluates the threat from lightning to explosives facilities.

The Board's inquiries into the lightning hazard have been beneficial and are much appreciated. I look forward to our continued discussions and plan on providing a more definitive path forward on this matter following the March 1998 meeting.

Should you have questions, please contact me or have your staff contact Dave Chaney of my staff at (301)903-8308.

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