A.J. Eggenberger, Chairman
Joseph F. Bader
John E. Mansfield
R. Bruce Matthews

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700 Washington, D.C. 20004-2901
(202) 694-7000

December 14, 2005

The Honorable Samuel W. Bodman
Secretary of Energy
1000 Independence Avenue, SW
Washington, DC 20585-1000

Dear Secretary Bodman:

In the Implementation Plan for the Defense Nuclear Facilities Safety Board's (Board) Recommendation 98-2, *Accelerating Safety Management Improvements at the Pantex Plant*, the Department of Energy (DOE) committed to develop a technical business practice (TBP) to establish guidance on expectations for the evaluation and documentation of weapon response to potential accident environments and stimuli. In this Implementation Plan, DOE stated that "there is great variability in the degree of supporting documentation that serves as the technical basis for conclusions drawn by laboratory experts." A well documented technical basis is particularly important for evaluating changes, as with the unreviewed safety question process.

In a letter dated December 14, 2004, the Board noted that previous efforts to satisfy this Implementation Plan commitment "fell short of establishing a consistent approach for evaluating weapon responses, particularly with respect to consensus expectations for an expert elicitation process and the supporting technical basis for documenting expert opinions."

On October 31, 2005, the Board received a draft TBP, *Hazard Analysis and Weapon Response*, for review and comment. The National Nuclear Security Administration (NNSA) letter forwarding the standard noted that NNSA now plans to develop a standard set of weapon response rules to cover many situations, which "reduced the necessity to explicitly define expectations for the evaluation and documentation of weapon response." Soon after, in a briefing on December 8, 2005, NNSA officials informed the Board that a TBP was no longer considered the appropriate vehicle for requirements on weapon response development. NNSA now intends to revise the Development and Production (D&P) Manual, Chapter 11.8, *Integration of Weapon Response into Authorization Bases at the Pantex Plant*, and the DOE Limited Standard DOE-DP-STD-3016, *Hazard Analysis Reports for Nuclear Explosive Operations*, instead of using a TBP to implement requirements for development of weapon responses. No date was offered for completing this overdue commitment.

The Board agrees that revising the D&P Manual and DOE-DP-STD-3016 would be a satisfactory means for implementing the needed requirements for evaluation and documentation of weapon responses. However, based on the December 8, 2005, briefing, it is unclear when such revisions would be developed and implemented. Furthermore, based on review of the draft

TBP and its October 31, 2005, forwarding letter, it does not appear that NNSA is moving toward defining requirements that meet the commitment in the Recommendation 98-2 Implementation Plan. Examples of specific deficiencies are listed below:

- No criteria are established for conducting a process to elicit expert opinions, documenting the technical bases for such opinions, and aggregating them in development of a final weapon response.

- No guidance is provided on how to apply the software quality assurance processes defined in DOE directives for software used in the development of weapon responses.

- No criteria are established for peer review of draft weapon responses, particularly the selection and qualification of reviewers.

- No criteria are established for independent review of weapon responses, such as when these reviews should be conducted or the selection and qualification of reviewers.

The guidance in the draft TBP is vague and does not establish effective criteria for evaluating and documenting weapon responses as is required by 10 CFR 830 Subpart A, *Quality Assurance Requirements*. The lack of criteria allows each design laboratory to develop its internal processes without consistent standards for approach, quality assurance, and documentation. In light of the fundamental deficiencies noted above and the uncertain schedule for completing this effort, the Board requests, pursuant to 42 U.S.C. § 2286b(d), a report within 30 days of receipt of this letter that provides a clear path forward for developing the required guidance.

Sincerely,

A. J. Eggenberger
Chairman

c: The Honorable Linton Brooks
Mr. Thomas P. D'Agostino
Mr. Mark B. Whitaker, Jr.