

# DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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March 15, 2010

The Honorable Daniel B. Poneman  
Deputy Secretary of Energy  
U. S. Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-1000

Dear Deputy Secretary Poneman:

The Defense Nuclear Facilities Safety Board (Board) is concerned that a recent regulatory interpretation by the Department of Energy (DOE) of Title 10, Code of Federal Regulations, Part 830, *Nuclear Safety Management* (10 CFR 830), undermines the principles of providing adequate protection of the public, workers, and the environment from DOE's defense nuclear facility operations. Specifically, the National Nuclear Security Administration (NNSA) has recently approved documented safety analyses in which the mitigated dose consequences to the public exceed DOE's Evaluation Guideline. Such approval implies that exceeding the Evaluation Guideline is an acceptable outcome of the prescribed safety analysis and control selection process.

Since its promulgation in January 2001, DOE has relied upon implementation of 10 CFR 830 to provide adequate protection of the public. The principle of adequate protection is dependent on the execution of regulatory criteria that lead to the implementation of an adequate set of hazard controls and demonstration of the adequacy of those controls to eliminate, limit, or mitigate the identified hazards to a "small fraction" of the Evaluation Guideline. Fundamental to this principle is the appropriate selection of safety class controls to prevent or mitigate adverse consequences to the members of the public from potential accidents. The selection of safety class controls is provided for in the "safe harbor" methodology set forth in DOE Standard 3009, *Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Documented Safety Analyses*.

Acceptable execution of the safe harbor methodology described in DOE Standard 3009 has been the subject of recent discussions with DOE. On December 30, 2009, the Board's staff met with representatives of NNSA and the Office of Health, Safety and Security to discuss this regulatory framework and its implementation at some defense nuclear facilities. Subsequently, NNSA's Chief of Defense Nuclear Safety developed a white paper intended to outline expectations for implementation of the safe harbor methodology.

The expectations outlined in the white paper, presented by DOE and NNSA personnel during extensive discussions, and evident (for example) in NNSA's approval of the documented safety analysis for Technical Area 55 at Los Alamos National Laboratory are fundamentally in

conflict with the Board's understanding of DOE's past practices during the 15 years since DOE Standard 3009 was established, as well as the Board's explicit position as outlined in past correspondence. A key document is the Board's letter to DOE dated July 8, 1999, in which the Board agreed with DOE's position that the requirement to ensure adequate protection of the public would be met by (1) compliance with the methodology prescribed in DOE Standard 3009 regarding analysis of the unmitigated dose consequences of design basis accidents, (2) comparison with the Evaluation Guideline, and (3) "designation as 'safety class' of any structure, system or component required to prevent exposures at the boundary from exceeding 25 rem Total Effective Dose Equivalent."

DOE Standard 3009 is clear about the application of the Evaluation Guideline and the fact that its value is not considered an acceptable public exposure; rather, its use sets a clear guideline for establishing when to invoke an effective set of safety class controls that reduce the potential dose consequences to the public to acceptably low values, referred to as a "small fraction of the Evaluation Guideline." *By accepting documented safety analyses with calculated mitigated consequences greater than the Evaluation Guideline, DOE is essentially nullifying the consequence-based methodology established by 10 CFR 830 and evident in DOE's practices since DOE issued the rule.*

The accident analysis process, the proper application of the Evaluation Guideline, and the identification of effective safety class controls are all fundamental for DOE to ensure adequate protection of the public health and safety. The Board would like to understand DOE's and NNSA's intent; specifically, if the recent regulatory interpretation is meant to apply across all DOE defense nuclear facilities. This is necessary to determine appropriate action on the part of the Board.

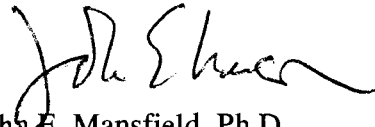
Therefore, pursuant to 42 U.S.C. § 2286b(d), the Board requests a response to the following questions within 30 days of receipt of this letter:

1. What is the regulatory status of DOE Standard 3009? That is, if a contractor chooses to use this methodology, what part of the recommended approach to safety and the contents of Appendix A for implementation of the Evaluation Guideline are mandatory, and what parts are optional?
2. What is DOE's regulatory framework for assuring adequate protection of the public, the workers, and the environment if the methodology prescribed in DOE Standard 3009 is used but the goals specified in Appendix A are not achieved? More specifically, if the mitigated dose consequences to the public, with safety class controls being credited, approach or exceed the Evaluation Guideline, what steps or actions must be taken to ensure adequate protection of public health and safety is provided?

Pursuant to 42 U.S.C. § 2286b(d), the Board further requests a report within 60 days of receipt of this letter describing:

1. Which defense nuclear facilities do not have a set of safety class controls that reduce the mitigated dose consequences to the public below the Evaluation Guideline?
2. For these facilities, what barriers exist to prevent DOE from meeting the Evaluation Guideline?
3. Which of these facilities deviate from, or have been unable to meet, DOE's position in response to items 1 and 2 on the previous page, and to what extent?

Sincerely,

A handwritten signature in black ink, appearing to read "John E. Mansfield". The signature is fluid and cursive, with a large initial "J" and "M".

John E. Mansfield, Ph.D.  
Vice Chairman

c: The Honorable Thomas P. D'Agostino  
The Honorable Kristina Johnson  
The Honorable Scott Blake Harris  
Mr. Glenn S. Podonsky  
Mr. Mark B. Whitaker, Jr.