DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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May 16, 2007

The Honorable J. Clay Sell
Deputy Secretary of Energy
1000 Independence Avenue, SW
Washington, DC 20585-1000

Dear Mr. Sell:

The Defense Nuclear Facilities Safety Board (Board) continues to follow the use of risk assessment methodologies for nuclear safety decisions in the Department of Energy (DOE) defense nuclear complex. Many risk assessments continue to be performed without the benefit of either a uniform or minimum set of policies, requirements, and guidance to provide a basis for creditability and reproducibility. This concern was documented in Board letters dated April 5, 2004 and November 23, 2005.

After three years, the Board is encouraged with the potential resolution suggested by the draft policy statement that was attached to the letter of January 9, 2007 from the Chief Health, Safety and Security Officer. In order to actually achieve the potential for progress contained in the draft policy statement, appropriate guidance (starting with the identification of requirements for personnel qualification, peer review, and treatment of uncertainty) must accompany the final policy. In addition, the policy must contain more clearly defined roles and responsibilities, as well as mechanisms to ensure quality and consistency in the conduct of risk assessment across the complex. Although the Board and its staff are available to support DOE's continued development of the risk assessment policy and associated guidance document in a timely manner, the history of this issue suggests that full implementation of the as yet unpublished *Risk Assessment Policy for Nuclear Safety* may require many years and necessitate the need for interim guidance.

The Board would like to understand DOE's expectations regarding the ongoing use of formal risk assessment in its oversight and operations at defense nuclear facilities. In particular, it would be useful to hear from both the owners of the policy and the line management responsible for implementing the policy. The Board feels it is imperative to define measures that can be employed to establish a risk assessment pedigree in the interim while the new risk assessment policy and its associated guidance are being developed and implemented.

The Board has enclosed "Specific Comments on the Draft Department of Energy Policy, Risk Assessment Policy for Nuclear Safety." These comments address recommended additions to the draft Policy and areas that should be addressed in the Policy.

Therefore, pursuant to 42 U.S.C. § 2286b(d), the Board requests a briefing within 45 days of receipt of this letter describing the specific actions DOE will take and the schedule on which they will take them to ensure risk assessments have the appropriate pedigree now and after the risk assessment policy and guidance are issued.

Sincerely,

A. J. Eggenberger
Chairman

c: Mr. Glenn S. Podonsky
Mr. Mark B. Whitaker, Jr.

Enclosure

Enclosure
Specific Comments on Draft Department of Energy Policy
Risk Assessment Policy for Nuclear Safety

1. The policy includes a number of examples of when risk assessment may be appropriately used to augment nuclear safety decisions. However, the policy does not identify those areas in which probabilistic risk assessment alone is not generally appropriate. While it may not be possible to delineate every potential misapplication of risk assessment methodologies, it is important that certain general prohibitions be identified to prevent misuse. The following language should be added to the policy:

   > Certain Department of Energy (DOE) activities may not be well suited to the use of probabilistic approaches. While probabilistic risk assessment and related methodologies may, in some cases, provide useful information, overreliance on these techniques would undermine DOE's commitment to a standards-based safety approach. Examples of inappropriate applications include, but are not limited to, use of probabilistic arguments or criteria alone to exclude operational hazard scenarios from further consideration and to define specific quantitative operational boundaries for activities or facilities. Other inappropriate applications include the use of risk assessments to demonstrate compliance or to serve as the sole basis for justifying noncompliance with specific requirements.

2. To ensure that the application of risk assessment is appropriately monitored and controlled, this policy or other DOE directives need to specifically identify those DOE elements responsible for the development and application of risk assessment methodologies and applications.

3. The policy references the Office of Management and Budget's (OMB) proposed bulletin on risk assessment, dated January 9, 2006. However, on January 11, 2007, the National Research Council recommended that OMB withdraw the proposed bulletin, which it determined to be "fundamentally flawed." DOE's draft policy needs to be evaluated in light of this new development.

4. The policy needs to provide, or at least reference, guidance on when risk assessments should address risks to the public and workers, environmental impacts, cost impacts, mission or project risks, or a combination of these. The policy also needs to provide (or reference) guidance on the selection and use of figures of merit (e.g., dose, curies released) to be used in evaluating risk. In particular, the policy needs to be clear on whether the guidance reflected in DOE's previous statement on risk assessment, as articulated in SEN-35-91, *Nuclear Safety Policy*, is still relevant.

5. Prior to submitting the draft policy for wider comment, it would be useful for DOE to solicit comments, input, or peer review from leading industry and academic experts in this area.