**The Secretary of Energy**
Washington, DC 20585

February 28, 2011

The Honorable Peter S. Winokur
Chairman, Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW Suite 700
Washington, DC 20004

Dear Mr. Chairman:

This is in response to your October 29, 2010, letter which provided Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 2010-1, *Safety Analysis Requirements for Defining Adequate Protection for the Public and the Workers.*

The Department of Energy (DOE) is strongly dedicated to the safety of the public, our workers, and the environment at all of our facilities. We share your conviction that a clear set of requirements and standards is vital for safe operations. In 2008, we began a comprehensive re-examination of our nuclear safety requirements to assure they were clear, concise, complete, and current. In March 2010, we enhanced our Directives Reform effort to better define and expedite it, and we have made good progress in revising key nuclear safety Directives and the DOE Nuclear Safety Policy.

We have not changed our interpretation of requirements for developing and approving Documented Safety Analyses (DSAs). We have made significant nuclear safety improvements by upgrading facility safety bases and designs and by improving our safety standards and procedures. Much has been learned and will continue to be learned about improving safety. With your assistance, we have applied the lessons learned from industry incidents to upgrade our requirements. Our improving safety record reflects these lessons.

Though DOE has an improving safety record, we always strive to do better. Complacency will not be tolerated. With this in mind, the Department has carefully evaluated Recommendation 2010-1 and how we can use it to improve nuclear safety at the Department. The Department partially accepts the Board's Recommendation; a detailed explanation is provided below. We have clarified aspects of sub-recommendation 1, 2, 3c, 4 and 5e. Several elements of Recommendation 2010-1 will be addressed in the revision of Standard 3009, *Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Documented Safety Analyses*. As we develop the Implementation Plan for Recommendation 2010-1, we will further engage the Board.

Sub-recommendation 1 -- *Immediately affirm the requirement that unmitigated, bounding-type accident scenarios will be used at DOE's defense nuclear facilities to*

*estimate dose consequences at the site boundary, and that a sufficient combination of SSCs must be designated safety class to prevent exposures at the site boundary from approaching 25 rem TEDE [Total Effective Dose Equivalent].*

DOE Standard 3009 details DOE's expectations for accident analyses to identify hazard controls for most DOE nuclear facilities. DOE agrees that Standard 3009 specifies that the consequences of unmitigated accidents should be compared to the 25 rem TEDE Evaluation Guideline to determine if safety class controls are warranted. As you know, new facilities follow the 25 rem TEDE limit as a siting criteria according to DOE Standard 1189, *Integration of Safety into the Design Process*. For existing facilities safety class Structures, Systems and Components (SSCs) are normally utilized to prevent exposures from exceeding 25 rem TEDE. Standard 3009 also includes provisions for use of other means and controls to assure safety where off-site exposures are not reduced to below 25 rem TEDE, or where SSCs are not available. The revised Standard 3009 will further clarify the use of the Evaluation Guideline in accident analyses for both new and existing facilities.

Sub-recommendation 2 -- *For those defense nuclear facilities that have not implemented compensatory measures sufficient to reduce exposures at the site boundary below 25 rem TEDE, direct the responsible program secretarial officer to develop a formal plan to meet this requirement within a reasonable timeframe.*

DOE's responsible Program Secretarial Officer has evaluated the safety measures planned or currently in place to protect the public at the few remaining defense nuclear facilities that have potential accident doses above the 25 rem TEDE, and has determined that these measures provide adequate protection. This conclusion is based on an evaluation of all protective measures in place at these facilities, including disciplined formal operations, training, safety management programs, control of materials, and layers of controls to prevent accidents and/or mitigate their consequences.

Consistent with DOE's commitment to continuous safety improvement, we will continue to evaluate options for enhancing the safety of these facilities. In some cases, such as the Plutonium Facility (PF-4) at Los Alamos National Laboratory, DOE anticipates that several near-term planned improvements will reduce the bounding mitigated dose to below 25 rem TEDE. Additionally, we have already made substantial progress in reducing the projected offsite dose that could result from specific types of accidents. For many limited life facilities we will achieve permanent, long-term risk reduction through deactivation and decommissioning. Once we revise DOE Standard 3009, DOE will evaluate the documented safety analyses for all facilities as part of the required periodic update process. The Implementation Plan will describe the steps that will be taken to evaluate safety improvement options for those facilities determined to need such improvements.

Sub-recommendation 3 -- *Revise DOE Standard 3009-94 to identify clearly and unambiguously the requirements that must be met to demonstrate that an adequate level of protection for the public and workers is provided through a DSA. This should be accomplished, at a minimum, by: (followed by four paragraphs labeled a-d).*

DOE is already revising Standard 3009 to clearly indicate which of its provisions are mandatory. DOE will implement the specific steps identified in paragraphs (a), (b), and (d) of this sub-recommendation. However, DOE will not commit to implementing paragraph (c) as written, because doing so would predetermine a specific outcome to the current revision process without any technical basis. This would be contrary to DOE's standards development process. DOE will consider the advice provided in paragraph (c) (i.e., identification of the criteria that must be met for safety class Systems, Structures and Components (SSCs)), during the Standard 3009 revision process.

The Implementation Plan will outline the development process and how the steps identified in all the paragraphs in this sub-recommendation will be followed.

Sub-recommendation 4 -- *Amend 10 CFR Part 830 by incorporating the revised version of DOE Standard 3009-94 into the text as a requirement, instead of as a safe harbor cited in Table 2.*

The purpose of a "safe harbor" is to provide a standard methodology that, if followed, will provide credible analyses and adequate safety. Nothing in the concept implies that "safe harbor" methodologies are the only way to meet requirements. Of course, alternative approaches must be approved by DOE, and the criteria for accepting these alternatives should be clearly defined.

DOE is planning to review 10 CFR 830 (issued in 2001),which identifies nuclear safety requirements, but we cannot commit to the exact language prescribed in the Recommendation—that is placing Standard 3009 in the body of the rule. As part of our review, we will update DOE Standard 3009, clearly identifying those provisions that are mandatory. When DOE Standard 3009 is not applied, appropriate means for reviewing and approving alternative methodologies will be established. This will assure implementation of DOE Standard 3009, where appropriate, while maintaining the flexibility to improve the standard, as needed. This approach has allowed DOE to make several important improvements to DOE Standards in the past. Details of the revision process will be provided in the Implementation Plan.

Sub-recommendation 5 -- *Formally establish the minimum criteria and requirements that govern Federal approval of the DSA, by revision of DOE Standard 1104-2009, and other appropriate documents. The criteria and requirements should include: (followed by five paragraphs labeled a-e).*

DOE agrees with the need for clear guidelines and requirements on the appropriate delegation of nuclear safety authorities and will revise DOE Standard 1104-2009 and other appropriate DOE documents to achieve this. DOE will implement the specific steps identified in paragraphs (a) through (d) of this sub-recommendation. However, DOE cannot commit to implementing paragraph (e) as written, because it implies that quantitative risk-based decision making must be established and used. The Department is exploring how quantitative methods could be applied to support decision-making on

safety issues at our sites and will keep the Board apprised of developments in this area. Today, deterministic and qualitative means are used.

The Department agrees that the decision to approve safety bases must rest on a documented conclusion. This conclusion should indicate that the safety basis provides a reasonable assurance that the facility can be operated safely, that the hazards have been adequately analyzed, and that the engineered and administrative controls provide adequate protection for the public, workers and the environment.
The Implementation Plan will outline DOE's revision to standard 3009 and the safety basis development process, will clarify the safety basis approval process, and identify how the steps in this sub-recommendation will be addressed.

Sub-recommendation 6 -- *Formally identify the responsible organization and identify the processes for performing independent oversight to ensure the responsibilities identified in Item 5 above are fully implemented.*

DOE has already identified the responsible organization for performing independent oversight for the Secretary: the Office of Independent Oversight, within the Office of Health, Safety and Security (HSS). However, HSS Independent Oversight protocols and delegation processes will be reviewed and modified as necessary to assure adequate oversight of nuclear safety delegations. The Implementation Plan will describe the steps DOE will take to review and update the protocols and delegation processes.

We appreciate your advice and will continue working closely with the Board to improve the Department's Directives in a manner that meets our shared objectives to the safe, effective, and efficient execution of our mission. We look forward to working further with the Board and its staff as we prepare the Implementation Plan.

If you have any further questions please contact Glenn Podonsky, Chief, Office of Health, Safety and Security, at 202-287-6071.

Sincerely,

Steven Chu