



The Secretary of Energy  
Washington, DC 20585

June 26, 2003

The Honorable John T. Conway  
Chairman  
Defense Nuclear Facilities Safety Board  
625 Indiana Avenue, NW  
Suite 700  
Washington, D.C. 20004-2901

Dear Mr. Chairman:

Enclosed is the Department of Energy's (DOE) Implementation Plan for the Defense Nuclear Facilities Safety Board's Recommendation 2002-3, *Requirements for Design, Implementation and Maintenance of Administrative Controls*. The Department will assure that administrative controls defining and analyzing the basis for safe operations are properly developed, appropriately implemented, and effectively maintained.

Ms. Beverly Cook, Assistant Secretary for the Office of Environment, Safety and Health, is responsible for ensuring the successful completion of this Implementation Plan. Mr. Richard Black, the Director of the Office of Nuclear and Facility Safety Policy, is responsible for the execution of this plan. Mr. Black can be contacted at 301-903-0104.

Sincerely,

A handwritten signature in black ink that reads "Spencer Abraham".

Spencer Abraham

Enclosure

cc:

J. McMonigle, S  
M. Whitaker, DR-1



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# U. S. Department of Energy

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## **Implementation Plan for Defense Nuclear Facilities Safety Board Recommendation 2002-3**

### *Requirements for the Design, Implementation, and Maintenance of Administrative Controls*



Washington, D.C. 20585

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# **DOE IMPLEMENTATION PLAN FOR DNFSB RECOMMENDATION 2002-3**

## **1. Background**

On December 11, 2002, the Defense Nuclear Facilities Safety Board (Board) issued Recommendation 2002-3. Recommendation 2002-3 noted concerns about the lack of rigor and quality assurance accorded some discrete operator actions or administrative controls that are required to control or mitigate the consequences of accidents at DOE nuclear facilities. The Board noted that the DOE Directives System does not contain adequate requirements for the design, implementation, and maintenance of important safety-related administrative controls to ensure that they will be effective and reliable. The Board recommended that DOE promulgate a set of requirements to establish appropriate expectations for the design, implementation, and maintenance of these important safety controls and that DOE ensure that all existing administrative controls of this nature be evaluated against these requirements and upgraded as necessary to meet expectations. On January 31, 2003, the Secretary accepted Board Recommendation 2002-3 and set forth a methodology and general actions to address the concerns.

### **Accordingly, the following actions are being taken to address this need:**

- Review existing DOE requirements and guidance to determine where clarification of requirements are warranted and what revision or clarification of guidance is needed to assure proper focus on the selection, development, implementation, and maintenance of administrative controls critical to preventing or mitigating accident consequences.
- Evaluate safety basis documents to identify discrete administrative controls critical to preventing or mitigating accident consequences. Determine whether these existing administrative controls satisfy the requirements and expectations described by the existing and revised directives and take necessary actions to upgrade those controls which do not meet the requirements.
- Strengthen our processes to ensure that critical administrative controls are properly designed, implemented and maintained.

## **2. Underlying Causes**

DOE has prepared a preliminary review of the existing baseline of DOE requirements and guidance on critical operator actions or administrative controls that are required to address consequences of accidents that would otherwise be unacceptable. The review indicated that no additional 10 CFR Part 830 QA or Safety Basis Requirements rulemaking is warranted to address the Board's primary concerns. Review of existing guidance in documents such as rule Implementation Guides DOE G 421.1-2 and DOE G 423.1.1 and in DOE-STD-3009 as well as the existing requirements of 10 CFR 830 indicates that the appropriate DOE expectations for the treatment of critical administrative controls are included, but are not as clearly stated or focused as those for safety structures, systems and components. However, the review indicated that it would be valuable to revise DOE-STD-3009 and DOE-STD-3011 and perhaps other guidance

documents after completion of implementation reviews by the program and field offices to provide more specificity and clarity of expectations to ensure that contractors consistently apply and implement DOE's existing requirements and guidance. Additionally, revisions will incorporate any lessons learned on implementation reviews done by EM and NNSA. Training materials are intended to be the vehicle for providing additional insights into methods of satisfying existing expectations.

There is some failure to adequately implement the existing requirements and guidance both in development of safety bases and in the dependability and effectiveness of execution of critical administrative controls. The failure to adequately implement the requirements or guidance on administrative controls may be due, in part, to the fact that the requirements and guidance are found in various places in the DOE rule guidance and standards and are not sufficiently focused or specific as those applicable to safety-class (SC) and safety-significant (SS) structures, systems and components (SSCs) -- i.e., engineered controls.

The guidance documents and standards referenced as safe harbor methodologies for safety analyses currently in place did not anticipate the utilization of critical administrative controls to the extent they have been used. Specific worker actions or attributes of safety management programs are sometimes identified in hazard analyses to accomplish safety functions equivalent in importance to SC or SS SSCs. This sometimes is done because it is not possible to qualify an SSC for safety class or safety significant service, or it is not cost effective to do so. In other situations, administrative controls are used for facilities with limited remaining life and in environmental restoration activities because of cost effectiveness considerations. Accordingly, there are not clear and focused statements of DOE expectations for critical administrative controls. There has not been sufficient training on attributes of critical administrative controls that should be inferred from the existing quality assurance and safety basis requirements of 10 CFR Part 830 and from associated guidance documents when this type of administrative control is invoked for accident prevention or mitigation.

This plan includes: 1) finalizing the assessment of existing requirements and guidance; 2) consolidating and clarifying existing DOE rule guidance and standards to ensure that contractors consistently develop, implement, and maintain critical administrative controls consistent with their importance to safety; 3) consolidating and clarifying the guidance to federal employees for reviewing existing safety bases to assure proper implementation of DOE's requirements; 4) ensuring that critical administrative controls in use in the DOE complex meet Departmental expectations; 5) strengthening the DOE processes that ensure the effectiveness and dependability of administrative controls; and 6) after completion of implementation reviews and use of interim guidance, revising as necessary Part 830 safe harbor methodologies to ensure continued proper interpretation and application of DOE requirements.

### 3. Related Activities

In accordance with the requirements of 10 CFR Part 830.207, contractors submitted rule-compliant safety bases by April 10, 2003. The DOE review and approval of these rule-compliant safety bases and/or annual updates of them will help to ensure that existing administrative controls that serve an important safety function, equivalent in importance to safety-class or safety-significant SSCs, are evaluated against DOE's requirements and guidance. Appropriate Nuclear Safety Technical Positions will clarify the requirements and guidance and will be factored into continuing reviews as part of the approval of the safety bases and as part of the annual updates. Additional measures, such as management directions, operational assessments, and implementation evaluations and reports will assure continued dependability and effectiveness of critical administrative controls.

### 4. Safety Issue Resolution

The central safety issue is: when administrative controls that provide safety functions similar in importance to safety class or safety significant engineered controls are selected for accident prevention or mitigation, they must be formulated and implemented in such a way that their safety functions are effective and dependable.

Contractors are aware of the DNFSB Recommendation 2002-3 and, at DOE's request, have discussed the issues at the January, 2003 EFCOG Safety Basis Workshop. As a result of the Board's Recommendation and EFCOG discussions, many safety bases documents that were prepared for 10 CFR Part 830 compliance may already have been reviewed more carefully by contractor organizations to address administrative controls.

The Office of Environmental Management (EM) already has taken steps to evaluate safety basis review criteria, issued supplemental guidance to DOE reviewers and issued EM best practices and lessons learned on safety control selection focused on administrative controls, dated May 20, 2003. EM has committed to evaluate the effectiveness of review and approval processes as well as implementation of the approved TSRs, including administrative controls. Implementation of TSR controls will be confirmed through independent verification processes that have been applied to several EM sites and will be institutionalized for the EM complex.

The Department's promulgation of more focused guidance will ensure that DOE expectations with respect to the selection, development, implementation, and maintenance of safety related administrative controls are clear to DOE's contractors. The Department also will take measures to provide DOE safety basis reviewers with the appropriate tools so that they can make the right decisions regarding acceptance and treatment of this class of administrative controls in safety basis documents.

The following actions will be taken to address this central safety issue.

**Commitment 4.1:** The Office of Nuclear and Facility Safety Policy has reviewed and analyzed existing requirements and guidance and assessed the need for expanded or more

focused requirements and guidance. A draft report has been prepared and will be finalized.

Lead Responsibility: Director, Office of Nuclear and Facility Safety Policy  
Deliverable: Report of the findings of the review

Due Date: July 31, 2003

**Commitment 4.2:** The Office of Nuclear and Facility Safety Policy will develop a Nuclear Safety Technical Position and more formal statements in DOE rule guidance and standards (e.g., a new standard on administrative controls, and additional guidance in DSA and TSR rule Implementation Guides for critical administrative controls) to serve as interim guidance to support consistent interpretation, and effective application and implementation of DOE's expectations for critical administrative controls. These more focused versions of rule guidance and the new standard will be developed, and then will be formally incorporated into appropriate DOE Guidance Directives or Technical Standards, with coordinated Program Office review, comment and formal issuance in conjunction with Commitment 4.8.

Lead Responsibility: Director, Office of Nuclear and Facility Safety Policy

Deliverables:

- 4.2.1 Nuclear Safety Technical Position (interim rule guidance)
- 4.2.2 Submit revised interim rule guidance to the Directives System and the new standard to the Technical Standards Program

Due Dates:

- 4.2.1: October 31, 2003
- 4.2.2: December 31, 2003

**Commitment 4.3:** EH will develop appropriate training materials suitable for contractor personnel responsible for selecting, developing, implementing and maintaining critical administrative controls. In addition, EH will develop training materials for DOE safety basis reviewers and DOE oversight personnel that will describe methods for identifying the critical administrative controls, methods of assuring their dependability and effectiveness, and how they should be treated in TSRs. The development of these training materials will incorporate lessons learned from ongoing safety basis reviews currently being conducted by EM.

Lead Responsibility: Assistant Secretary for Environment, Safety and Health (EH)

Deliverables:

- 4.3.1 Training materials for contractor personnel responsible for selecting, developing, implementing, and maintaining critical administrative controls

- 4.3.2 Training materials for federal employees responsible for evaluating the development, implementation and maintenance of critical administrative controls.

Due Date: January 30, 2004

**Commitment 4.4:** NNSA and EM will ensure the completion of initial training for relevant DOE, NNSA, and contractor organizations on the materials developed under commitment 4.3 and will ensure that training focus is captured in the appropriate contractor and DOE training programs.

Lead Responsibility: Deputy Administrator of Defense Programs, NNSA  
Assistant Secretary, Office of Environmental Management

Deliverables:

- 4.4.1 A report of training completed
- 4.4.2 Copies of changes to relevant training plans

Due Date: October 29, 2004

**Commitment 4.5:** NNSA and EM will confirm that the requirements and guidance regarding critical administrative controls are properly treated in the safety basis documents and subsequent implementing procedures and controls for individual facilities as part of the review and approval of safety basis documents and/or annual updates thereof. NNSA and EM will conduct safety basis document reviews on a site-wide basis or on the basis of risk such as facility hazard category and, as these reviews are completed, a report will be developed for lessons learned and any corrective actions needed. NNSA and EM will develop appropriate plans and schedules to resolve any deficiencies identified during these reviews.

Lead Responsibility: Deputy Administrator of Defense Programs, NNSA  
Assistant Secretary, Office of Environmental Management

Deliverables:

- 4.5.1 A final report to the Secretary of Energy of the results of the safety basis reviews after one cycle of annual updates, including the results of facility-specific assessments of incorporation of critical administrative controls in safety basis documents
- 4.5.2 Schedules for actions to resolve any outstanding deficiencies identified during these reviews

Due Dates:

- 4.5.1: Final report, including schedule for corrective actions completed by December 30, 2004

**Commitment 4.6:** NNSA and EM will review field implementation of existing critical administrative controls to ensure that they are developed, implemented and maintained in accordance with DOE expectations as part of normal safety basis implementation or operational oversight. Reviews will be conducted on a site-by-site or risk basis. NNSA and EM will develop a report detailing field reviews, lessons learned, and appropriate plans and schedules to resolve any outstanding implementation deficiencies identified during these reviews.

Lead Responsibility: Deputy Administrator of Defense Programs, NNSA  
Assistant Secretary, Office of Environmental Management

Deliverables:

- 4.6.1 A schedule of implementation reviews and implementation review reports from NNSA and EM
- 4.6.2 Final Report from NNSA and EM documenting the completion of field implementation reviews of critical administrative controls identified at defense nuclear facilities
- 4.6.3 Schedules for actions to resolve any outstanding implementation deficiencies identified during the reviews

Due Dates:

- 4.6.1: Review schedule by January 30, 2004
- 4.6.2: Final report, including schedule for corrective actions, by June 30, 2005

**Commitment 4.7:** EH will evaluate the overall success of the effectiveness of implementation of the guidance. EH will utilize NNSA and EM field evaluations and field resources to complement the EH evaluation. The Department will address any adverse findings and issue supplemental instructions as necessary.

Lead Responsibility: Assistant Secretary for Environment, Safety and Health

Deliverables:

- 4.7.1 EH to conduct a final review to evaluate the overall effectiveness of the implementation of the plan
- 4.7.2 Report to the Secretary of Energy of the findings of the evaluation

Due Date: December 30, 2005

**Commitment 4.8:** DOE will review the interim guidance developed for Commitment 4.2 and, based on the comments received and the lessons learned from the reviews conducted in accordance with Commitments 4.5 and 4.6, will develop appropriate revisions to the DOE Standards 3009 and 3011 (the Part 830 safe harbor methodologies), and as necessary other DOE Standards, Rule Guidance and Directives as part of the normal DOE review and revision process.

Lead Responsibility: Director, Office of Nuclear and Facility Safety Policy

Deliverable: Revised DOE Standards, Rule Guidance and Directives (e.g., DOE-STDs-3009, 3011, 1104, DOE G 421.1-1 and 423.1-1) submitted for DOE review in the DOE Directives System or DOE Technical Standards Program, as appropriate

Due Date: November 30, 2005

## **5. Organizations and Management**

The Office of Environment, Safety and Health (EH) is responsible for developing and proposing Departmental ES&H policy, rules, and regulations and associated guidance, standards and technical interpretations in concert with programmatic and field element needs. The Assistant Secretary of EH is the Cognizant Secretarial Officer for this function and related actions under this Plan. Within EH, the Office of Nuclear and Facility Safety Policy is responsible for nuclear safety requirements, guidance, and standards associated with nuclear facility safety bases. The Responsible Manager for the execution of the Plan is the Director, Office of Nuclear and Facility Safety Policy. In this capacity, the Responsible Manager will ensure that associated actions, deliverables, and commitments are accomplished. The Responsible Manager will ensure that the appropriate DOE line organizations are involved in implementing the objectives of this Implementation Plan.

## **6. Reporting**

To ensure the various Department implementing elements and the Board remain informed of the status of plan implementation, the Department's policy is to provide progress reports to the Board and/or Board staff. The Department will provide briefings to the Board and/or Board staff approximately every six months.

**Commitment 6.1:** The Department will provide briefings to the Board and Board Staff. These briefings will include updates on the status of completing actions identified in the various reviews and assessments indicated in this IP.

Lead Responsibility: Assistant Secretary for Environment, Safety and Health

Deliverable: Briefings

Due Date: November 2003, and approximately every six months thereafter until the Board Recommendation is closed