



The Secretary of Energy  
Washington, DC 20585

November 13, 2001

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

Dear Mr. Chairman:

Enclosed is the *Final Report to the Defense Nuclear Facilities Safety Board on Recommendation 98-1*, which provides a summary of actions taken to resolve the issues contained in the Board's September 1998 recommendation 98-1 to address and resolve the environment, safety and health issues identified by the Department's independent oversight organization.

The Department has completed the actions and commitments identified in the Secretary's March 1999 implementation plan. The Department has institutionalized and implemented the necessary program upgrades and these upgrades are now part of the Department's routine management process. These actions have resulted in significant improvement to the Department's process for addressing and resolving safety issues identified by the independent oversight organization.

The report also provides the basis for closing Board recommendation 98-1. The Department welcomes the Board's ongoing oversight and continued vigilance on the effectiveness of the Department's feedback and improvement processes. Effective resolution of corrective actions in response to internal oversight safety issues is essential for continuous safety improvement within the Integrated Safety Management framework.

If you have any questions, please contact me or Mr. Steven J. Petersen, Co-Chairman of the Corrective Active Management Team, Office of Environment, Safety and Health, at (301) 903-4022.

Sincerely,

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

Spencer Abraham

Enclosure



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**U. S. Department of Energy**

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**Final Report to the  
Defense Nuclear Facilities Safety Board  
on Recommendation 98-1**



**Washington, D.C. 20585**

**November 2001**

**FINAL REPORT TO THE  
DEFENSE NUCLEAR FACILITIES SAFETY BOARD  
ON RECOMMENDATION 98-1**

This report addresses the following topics:

- Background
- Status of Completion of the 98-1 Plan Commitments
- Status of the Department's Corrective Action Plan to its 98-1 Verification Report
- Quarterly Corrective Action Management Program Reports
- Institutionalization of the Corrective Action Management Program
- Basis for Closure of Recommendation 98-1

The report concludes that the Department has addressed the issues raised in the Board's recommendation 98-1, and fully institutionalized and implemented the DOE commitments in response to these issues so that they will remain resolved.

**1. BACKGROUND**

The Defense Nuclear Facilities Safety Board (Board) issued recommendation 98-1 on September 28, 1998. Under this recommendation, the Board cited the need to establish a clear, comprehensive, and systematic process to address and effectively resolve the environment, safety and health issues identified by independent oversight during the conduct of assessment activities. The Board urged the Department to take additional action by establishing clearer lines of authority and responsibility for resolution of these safety issues. Specifically, the Board provided two sub-recommendations:

- 1. Establish by policy statement, directives, or other protocols, the manner in which the Secretary expects Cognizant Program Secretarial Officers (Assistant Secretaries) and Field managers to address and resolve findings of its independent internal corporate safety organization.*
- 2. Make explicit the Secretarial Officer or designee assigned the resolution function.*

Former Secretary Richardson accepted the Board's recommendation on November 20, 1998 and committed to the development of an implementation plan to address the recommendation.

On March 10, 1999, the Secretary provided the Board with his implementation plan, *U. S. Department of Energy Plan to Address and Resolve Safety Issues Identified by Internal Independent Oversight*. The Department committed to take the following actions:

- *Establish a disciplined process and clarifying roles and responsibilities for the identification of, and response to, safety issues.*
- *Establish clearer direction on elevating any disputed issues for resolution to the Office of the Secretary, if necessary.*

- *Establish a tracking and reporting system to manage completion of corrective actions effectively.*

Recognizing the relation between the 98-1 plan and the Integrated Safety Management initiative, the Secretary assigned the Director of the Safety Management Implementation Team (SMIT), as the responsible manager for the plan implementation.

## 2. STATUS OF COMPLETION OF THE 98-1 PLAN COMMITMENTS

All 98-1 plan commitments are complete. The completion status of the 98-1 plan commitments is provided in Table 1.

**Table 1: Status of 98-1 Plan Commitments**

#	Commitment	Status
5.1.1	The Office of Oversight will review and modify as necessary its existing protocols to enhance line management understanding of identified safety issues.	<b>Complete.</b> The EH Office of Oversight provided the revised protocols to the Board on July 15, 1999. In addition, on June 30, 2000, the Department forwarded to the Board the EH Office of Oversight's Safety Issue Corrective Action Process Procedure, approved on April 11, 2000.
5.1.2	The process to address and resolve safety issues identified by the Office of Oversight described in the resolution approach will be incorporated into appropriate directives documents; functions, responsibilities and authorities for effective response will be defined.	<b>Complete.</b> Two Department directives were revised to upgrade the process and clarify the responsibilities: DOE Manual 411.1-1A (Functions, Responsibilities, and Authorities Manual) and DOE Order 414.1A (Quality Assurance). Copies of these revised directives were provided to the Board on October 19, 1999. These directives were subsequently revised again to sustain and strengthen earlier changes. Detailed guidance for resolving Oversight issues was also added to DOE Guide 450.4-1B (Integrated Safety Management System Guide), issued on March 1, 2001, and DOE Guide 414.1-1A (Management Assessment and Independent Assessment Guide), issued on May 31, 2001.
5.1.3	Verify that the Department's process to address and resolve safety issues identified by the Office of Oversight has been effectively implemented.	<b>Complete.</b> The Department provided the Board with its verification approach on January 18, 2000 and briefed the Board at the January 20, 2000 public meeting. The Department conducted the verification from January to May 2000. The verification results were briefed to the Board on May 31, 2000, and the verification report was provided to the Board on June 9, 2000. The corrective action plan, approved on July 18, 2000, was provided to the Board on September 5, 2000.
5.2	Develop direction and guidance for elevating safety, technical, managerial, budget, prioritization, timeliness, inadequate response, or other issues arising from line management's development, implementation, and verification of closure of CAPs. This direction and guidance will define a systematic process for elevating issues to	<b>Complete.</b> Two Department directives were revised to upgrade the process and clarify the responsibilities: DOE Manual 411.1-1A (Functions, Responsibilities, and Authorities Manual) and DOE Order 414.1A (Quality Assurance). Copies of these revised directives were provided to the Board on October 19, 1999. These directives were

#	Commitment	Status
	the Office of the Secretary for resolution, including explicitly assigned roles and responsibilities.	subsequently revised again to sustain and strengthen earlier changes. Detailed guidance for resolving Oversight issues was also added to DOE Guide 450.4-1B (Integrated Safety Management System Guide), issued on March 1, 2001, and DOE Guide 414.1-1A (Management Assessment and Independent Assessment Guide), issued on May 31, 2001.
5.3.1	Develop and approve a charter for the Integrated Corrective Action Management (I-CAM) Team.	<b>Complete.</b> The I-CAM Team charter was approved on March 18, 1999 and forwarded to the Board on March 26, 1999. After initial implementation, the I-CAM Team was reconfigured to the Corrective Action Management (CAM) Team. The CAM Team charter was approved on October 24, 2000.
5.3.2	Fully develop the "DOE Corrective Action Tracking System", consistent with the direction of the I-CAM Team and issue system protocols for users.	<b>Complete.</b> The Corrective Action Tracking System (CATS) was demonstrated to the Board staff on June 1, 1999. The I-CAM Team accepted the CATS for use on June 18, 1999. CATS documentation has been provided to the Board staff. The CATS continues to be upgraded and improved to increase effectiveness and accuracy. The CATS Users Guide and Data Dictionary were recently updated. CATS training is periodically provided to headquarters and site representatives.
5.3.3	Populate the "DOE Corrective Action Tracking System" with information on relevant safety issues and corrective actions associated with the legacy assessment reports issued by the Office of Oversight since August 1995.	<b>Complete.</b> Population of the CATS database was essentially complete in October 1999. A CATS database printout was provided to the Board staff on October 5, 1999. The initial Corrective Action Management Program Quarterly Report was issued on January 19, 2000; Quarterly Report has been issued 8 times over the past 2 years, with copies provided to the Board at each issuance.
5.3.4	Provide a report summarizing tracking system ownership, funding, maintenance and effectiveness of the CATS, with any recommended changes, if necessary.	<b>Complete.</b> The Department completed a report on the effectiveness of the Department's Corrective Action Tracking System, and provided this report to the Board on March 1, 2000. CATS changes and focused attention by the CAM Team have resulted in significant improvements in the timeliness and accuracy of CATS updates.
6.2	During the first year of Plan implementation, the Department will provide either a quarterly report, or a briefing to the Board and its staff as part of the briefings provided to the Board in support of the Department's Implementation Plan for Board Recommendation 95-2 and ISM implementation. Reports or briefings required after the first year of implementation will be provided semi-annually. Briefings will also be provided as requested by the Board, and will be requested by the Department at the discretion of the Responsible Manager.	<b>Complete.</b> The Department briefed the Board periodically in conjunction with the Board's public meetings on Integrated Safety Management. The Department briefed the Board on the following dates: May 25, 1999; September 29, 1999; January 20, 2000; May 31, 2000; and February 22, 2001. For each of the last 3 public meetings, the Department provided responses to follow-up questions from the Board. Department responses to the associated Board reporting requirements were provided on the following dates: March 16, 2000; September 5, 2000; and July 27, 2001.

As a result of completing these planned actions, the Department has achieved significant improvement in its process for addressing and resolving internal oversight findings. The effectiveness of the 98-1 plan is demonstrated by the following points:

- A comprehensive and systematic corrective action program is now in place.
- Clear lines of authority and responsibility have been established.
- A process and tool to track, report, and monitor corrective actions has been established.
- Communications between line management and internal oversight has been enhanced.
- Involvement of DOE line managers in approving and monitoring corrective action has been increased.
- Follow-up on corrective actions by cognizant line managers has been improved.
- Quality, timeliness, accuracy, relevancy, and effectiveness of corrective actions have been improved.

### **3. STATUS OF DEPARTMENT'S CORRECTIVE ACTION PLAN TO ITS 98-1 VERIFICATION REPORT**

In early 2000 the Department conducted an independent review to verify that the planned process improvements were in place and effective. The verification results were briefed to the Board on May 31, 2000, and the verification report was provided to the Board on June 9, 2000. The verification identified two main issues that needed additional attention to conclude that the process was institutionalized and effective:

- 1) Program and field offices needed to finish revising their Functions, Responsibilities, and Authorities (FRA) documents and Quality Assurance Plans (QAPs) to incorporate requirements and guidance of DOE directives on the corrective action program, and
- 2) Stronger linkages needed to be established between the corrective action program and the lessons learned program.

In response to these verification findings, the CAM Team prepared a corrective action plan, approved in July 18, 2000 and provided to the Board on September 5, 2000. The field offices have substantially completed incorporation of corrective action program requirements and guidance into their own Functions, Responsibilities, and Authorities (FRA) documents and Quality Assurance Plans (QAPs). Most of the headquarters have done likewise, although revised FRA documents have not yet been approved for two headquarters organizations: the Office of Environment, Safety and Health (EH) and the National Nuclear Security Administration (NNSA). Both EH and NNSA expect to complete these documents within the next 12 months, pending completion of ongoing reorganization efforts. Regarding strengthening the link to lessons learned, the Integrated Safety Management Guide (DOE Guide 450.4-1B) was revised address this issue and other pending improvements, and was issued on March 1, 2001. Changes to the ISM Guide include addition of responsibilities and sources for incorporating lessons learned for each oversight issue into the DOE Lessons Learned Program.

#### 4. QUARTERLY CORRECTIVE ACTION MANAGEMENT PROGRAM REPORTS

The first Secretary's Quarterly Corrective Action Management Program report was published in January 2000 for the quarter ending in December 1999. A total of 8 quarterly reports have been issued. Table 2 summarizes the report dates and report periods.

Each quarterly report contains the status of corrective action plans and their associated corrective actions to address safety issues within the Department. Each report lists the quarterly status of:

- new assessment reports published,
- corrective action plans pending approval and whether the plans are overdue or on schedule,
- corrective action plans that have been approved,
- status of corrective actions for open corrective action plans, including whether corrective actions are open or completed, and if open, whether they are on schedule or past the planned completion date, and
- corrective action plans completed.

Each quarterly report also provides a graphic portrayal of the status of corrective actions in the Department by field element and Cognizant Secretarial Office (CSO). This includes the total of corrective actions completed, on schedule, and late.

Since inception of the Department's 98-1 implementation plan, the Department has tracked within the CATS the status of corrective action plans and associated corrective actions in response to 92 oversight appraisal reports and summarized this status in a quarterly report for senior managers. To date, the CATS has tracked the status of 3252 corrective actions developed by line managers in response to identified safety issues. Over the past year, the average number of corrective action plans late for approval and late for completion has declined.

The CAM Team has worked diligently to improve each quarterly report to more accurately portray the status of the program. Recent upgrades include additional explanation and clarification of information contained in the report, inclusion of line management explanation for late corrective action plans and corrective actions past the planned corrective action plan completion date, and revision of the report graphics to better depict the overall status of corrective actions.

**Table 2 - Secretary's Quarterly Corrective Action Management Program Reports**

<b>Report Date</b>	<b>Period Covered</b>
January 19, 2000	October - December 1999
April 5, 2000	January - March 2000
July 10, 2000	April - June 2000
October 11, 2000	July - September 2000
January 8, 2001	October - December 2000
April 19, 2001	January - March 2001
July 17, 2001	April - June 2001
October 19, 2001	July - September 2001

Table 2 lists the quarterly reports issued to date. Table 3 summarizes the number of new Oversight reports per quarter and the number of Corrective Action Plans in development.

**Table 3 - Corrective Action Plans in Development**

<b>Report Date</b>	<b>New Oversight Reports Issued</b>	<b>Total CAPs in Development</b>	<b>CAPs in Development - On Schedule</b>	<b>CAPs in Development - Late</b>
January 19, 2000	5	6	4	2
April 5, 2000	5	9	2	7
July 10, 2000	5	5	3	2
October 11, 2000	2	5	0	5
January 8, 2001	3	4	1	3
April 19, 2001	2	1	1	0
July 17, 2001	3	3	3	0
October 19, 2001	3	5	3	2

Table 3 shows that a total of 28 oversight reports requiring Corrective Action Plans were issued since October 1999. This is in addition to the legacy reports that were included in the 98-1 plan scope and self-assessment reports added to the CATS database. Corrective Action Plans have been developed and approved for all but three reports. Two Corrective Action Plans under development were reported overdue in the most recent report. Table 4 summarizes performance in completing corrective actions by the approved Corrective Action Plans due date (i.e., the planned date for completing all corrective actions listed in the approved Corrective Action Plan).

**Table 4 - Corrective Action Plan Completion**

<b>Report Date</b>	<b>CAPs Completed during Qtr.</b>	<b>Total CAPs Being Worked at End of Qtr.</b>	<b>CAPs On Schedule</b>	<b>CAPs Late</b>
January 19, 2000	0	23	19	4
April 5, 2000	1	29	21	8
July 10, 2000	7	18	17	1
October 11, 2000	3	33	19	14
January 8, 2001	2	24	19	5
April 19, 2001	8	29	25	4
July 17, 2001	3	28	25	3
October 19, 2001	3	24	19	5

Table 4 shows a total of 27 Corrective Action Plans have been completed since October 1999. In addition, another 24 Corrective Action Plans are approved and being worked as of the end of September 2001. All but 5 CAPs are on schedule (i.e., the final due date included in a Corrective Action Plan has not been exceeded with the CAP still open). Table 5 summarizes performance in completing individual corrective actions contained in the Corrective Action Plans.

**Table 5 - Corrective Action Completion**

<b>Report Date</b>	<b>Corrective Actions - Completed</b>	<b>Corrective Actions - On Schedule</b>	<b>Corrective Actions - Late</b>	<b>Total Corrective Actions in CATS</b>
January 19, 2000	133	174	69	376
April 5, 2000	1702	122	126	1950
July 10, 2000	2034	197	128	2359
October 11, 2000	2301	141	71	2513
January 8, 2001	2369	185	245	2799
April 19, 2001	2745	300	92	3137
July 17, 2001	2865	208	112	3185
October 19, 2001	3053	163	36	3252

Table 5 shows a steady trend of completing identified corrective actions. Over 3200 corrective actions have been identified to date by line managers. Over 3000 corrective actions have been completed to date. The number of late corrective actions is higher than desired but is manageable. On time completion of corrective actions remains an area for improvement within the Department.

The CAM Team continues to upgrade the Quarterly Corrective Action Management Program Reports based on input from DOE senior managers.

## **5. INSTITUTIONALIZATION OF THE CORRECTIVE ACTION MANAGEMENT PROGRAM**

Process upgrades must be institutionalized to ensure that the fundamental issues will continue to be adequately addressed in the future. The prime mover in effectively institutionalizing these upgrades is the Corrective Action Management (CAM) Team. The CAM Team consists of representatives of various program and field offices, and is co-chaired by one line representative and one EH representative. The CAM Team is sponsored by Dr. David Stadler, Deputy Assistant Secretary, Office of Environment, Safety and Health. The CAM Team continues to identify and implement process improvements. Recent improvements led by the CAM Team include automatic electronic notifications to applicable line managers of late corrective action plans and corrective actions past the corrective action plan completion date, increased formal and informal follow-up activities with line management to ensure timely and accurate corrective action status, and upgrades to the Quarterly Corrective Action Management Program Report.

Department Manual M 140.1-1B, Interface with the Defense Nuclear Facilities Safety Board, delineates six factors that should be considered in evaluating whether the upgrades are adequately institutionalized. Each of these factors is addressed below:

- **Line Management Ownership** - The Cognizant Secretarial Officers and the Field Element Managers are responsible for preparing and implementing Corrective Action Plans in response to oversight reports. Over the past year, the responsible line managers have been providing Corrective Action Plans in a timely manner and providing periodic CATS updates. Line performance in providing timely and accurate CATS updates has improved significantly in the past year, prompted by line representatives on the CAM Team. As of the September 2001 Quarterly Corrective Action Management Program Report, two Corrective Action Plans under development were reported overdue for approval. Further, a total of 5 Corrective Action Plans have one or more actions not completed within the target schedule for completing the entire Corrective Action Plan. While room for improvement exists in developing and approving Corrective Action Plans in a timely manner, these numbers are manageable, and reflect a sound sense of ownership by line management of the corrective action process. In addition to preparing and completing corrective actions and maintaining an up-to-date status, DOE programs are providing representatives on an ongoing basis to the CAM Team, including one co-chair from the line programs, to improve and sustain this program.
- **Clearly Defined Roles and Responsibilities** - The roles and responsibilities for process implementation are clearly defined and delineated in the following DOE directives: DOE Manual 411.1-1B (Functions, Responsibilities, and Authorities Manual), DOE Order 414.1A (Quality Assurance), DOE Guide 414.1-1A (Management Assessment and Independent Assessment Guide), and DOE Guide 450.4-1B (Integrated Safety Management System Guide). Program and field offices are defining roles and responsibilities in local Functions,

Responsibilities and Authorities documents and Quality Assurance Plans to ensure line implementation of the Corrective Action Management Program. The Department has recently decided to transition responsibility for independent oversight to the Office of Independent Oversight and Performance Assurance (OA). This change will have a minimal impact on the way that independent oversight is accomplished as the applicable personnel and protocols are transferring also. Roles and responsibilities for the oversight office are contained in OA protocols and procedures. OA personnel are developing recommendations for appropriate changes to Department directives to reflect the change in organization designation. Roles and responsibilities for coordinating the overall Department corrective action management program are maintained in the CAM Team Charter.

- **Senior Management Attention** - DOE senior managers are involved in reviewing and approving Corrective Action Plans in response to internal oversight evaluations. Most senior managers have internal reports and briefings on the status of their corrective actions. The CAM Team provides DOE senior managers with a summary Corrective Action Management Program Report on a quarterly basis. Each Cognizant Secretarial Officer discusses the status of corrective actions with independent oversight managers in regularly scheduled meetings. The Quarterly Corrective Action Management Program Reports have prompted senior management (including the Deputy Secretary) to ask questions and hold subordinates accountable for assessing and completing their corrective actions. This report has been discussed at senior management forums such as the FMC and the Field Managers meetings. Comments from DOE senior managers have resulted in changes to the Quarterly Report to make this report more useful to senior managers.
- **Incorporation into Standard Practices, Procedures and Directives** - The process is fully delineated and incorporated within the following DOE directives: DOE Manual 411.1-1B (Functions, Responsibilities, and Authorities Manual), DOE Order 414.1A (Quality Assurance), DOE Guide 414.1-1A (Management Assessment and Independent Assessment Guide), and DOE Guide 450.4-1B (Integrated Safety Management System Guide). In addition, the process is incorporated within the Office of Oversight protocols and procedures. CATS update and status process is defined in the CATS User's Guide. The process for cross-program coordination is delineated in the CAM Team Charter.
- **Continued Funding** - Ongoing funding has not been an issue throughout plan implementation. As part of their responsibility, the line office must cover the cost of preparing and implementing Corrective Action Reports, updating CATS status, and providing representatives on the CAM Team. The Office of Environment, Safety and Health (EH) covers funds required for administering the process, supporting the CAM Team operations, maintaining the directives, and administering the CATS database. No funding challenges are expected.
- **Safety Culture** - The "Feedback and Improvement" function is now deeply imbedded within the Department's safety culture, built upon the Integrated Safety Management System framework. Nevertheless, effective performance of this "Feedback and Improvement" function remains one of the biggest challenges of ISM. Line managers and line organizations clearly and readily acknowledge the need to effectively determine and implement corrective

actions to resolve independent oversight findings and issues. Room for improvement still exists on timely completion and effectiveness of line-identified corrective actions. The CAM Team recently revised the CATS program so that automatic e-mail alerts were sent to the line program representatives when certain key due dates are exceeded. Continued attention and vigilance by the line managers and the CAM team is expected to further strengthen the Department's safety culture in the important area of "Feedback and Improvement."

#### **6. BASIS FOR CLOSURE OF RECOMMENDATION 98-1**

Board recommendation 98-1 has accomplished its purpose. Department implementation of this recommendation has significantly enhanced safety management programs. The issues raised by recommendation 98-1 have been fully addressed. A clear basis for closure exists:

- The Department has completed all commitments and actions identified in its 98-1 implementation plan.
- The corrective actions have been fully institutionalized with the Department's management process.
- The safety issues raised in the Board's recommendation 98-1 have been resolved and confidence exists that they will remain resolved in the future.