

**[DOE LETTERHEAD]**

February 7, 1997

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

Dear Mr. Chairman:

Enclosed is the [quarterly progress report](#) on implementation of Defense Nuclear Facilities Safety Board Recommendation 94-2 for the period from October 1, 1996, to December 31, 1996.

The report shows that the Department has continued to make good progress in implementing the task initiatives to which it has committed. The body of the progress report contains a status table on the task initiatives that were due during the current reporting period. A status table on all of the task initiatives is included as an appendix.

Sincerely,

***Alvin L. Alm***  
Assistant Secretary for Environmental Management

Enclosure

cc: Mark Whitaker, S-3.1

**Quarterly Report**  
**for**  
**Implementation Plan**  
**Defense Nuclear Facilities Safety Board**  
**Recommendation 94-2**

**Conformance with Safety Standards at  
Department of Energy  
Low-Level Nuclear Waste and Disposal Sites**

**October 1 through December 31, 1996**

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## **1.0 INTRODUCTION**

The Department of Energy (DOE) issued the "Implementation Plan (IP), Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 94-2" in March 1995. In May 1996 DOE issued a revision to the IP that reflected enhancements to DOE's approaches to the systems engineering and the radiological assessments, and better integration and coordination of both the task initiatives and the involved organizations. In August 1996, the Department received a letter from the DNFSB accepting the revised IP, with conditions.

The revised IP follows the same general approach as the original IP, identifying initiatives in six task areas:

- Systems Engineering
- Complex-Wide Review
- Regulatory Structure and Process
- Radiological Assessments
- Low-Level Waste Projections
- Research and Development

This is the fifth report on the status of task initiatives as described in the IP that DOE is undertaking to improve its management of low-level waste (LLW). This report covers the period from October 1, 1996, to December 31, 1996.

## **2.0 OVERVIEW**

### **2.1 General Progress**

During this reporting period DOE continued to make very good progress on implementing the activities committed to in the revised DNFSB 94-2 Implementation Plan. The Department

completed commitments in three task areas; one in Regulatory Structure and Process, two in Radiological Assessments, and two in Waste Volume Projections. A document providing guidance on integrating DOE Order 5820.2A, "Radioactive Waste Management," with onsite remediation disposal actions was also prepared. Guidance was also provided on the process and criteria for review of low-level waste disposal facility composite analyses and for the preparation and review of disposal facility performance assessments. These three documents will be incorporated into the DOE Order 5820.2A revision efforts.

A mixed low-level waste minimization evaluation and strategy was prepared to augment a similar document prepared during the last reporting period which focused on non-hazardous low-level waste. In addition, documentation was issued on the development of low-level waste projections.

Much of the effort in this reporting period was focused on the development of two documents that are key to the low-level waste management program. Work is underway on the Low-Level Waste Program Management Plan, the culminating document in the Systems Engineering task area. To enhance the integration of DOE's low-level waste management activities across DOE sites, this Plan is being prepared with participation from Headquarters and field organizations.

Similarly, the development of essential requirements for the management of low-level waste is being conducted with input from Headquarters, field, and contractor staff. This effort is part of the DOE Order 5820.2A revision effort. Two workshops were held during this reporting period during which staff performed analyses that will form part of the technical basis for requirements to be included in the revised Order. The revised Order will also incorporate a number of the deliverables that have been undertaken as part of the implementation of DNFSB Recommendation 94-2. These include the interim policy on regulatory structure for low-level waste management, and the policy and guidance on DOE Order 5820.2A compliance for onsite disposal of remediation waste. In addition, other DNFSB 94-2 implementation commitments will be used as is, or with minor modification, as guidance to the revised Order.

In December the DNFSB held a public meeting on the DOE directives system. This meeting addressed DOE rulemaking and Order development. A senior official from the Office of Waste Management provided comment on the DOE Order 5820.2A revision at the meeting.

## **2.2 Meetings with the DNFSB and Staff**

### **2.2.1 Meetings During this Reporting Period**

In this reporting period DOE staff had the following interactions with staff from the DNFSB to discuss implementation activities:

- DOE staff and DNFSB staff met on October 28 at the DOE Order revision workshop in Las Vegas to discuss status and progress of Regulatory Structure and Process activities. Specifically, the process being used to revise the DOE Order on Radioactive Waste Management was reviewed.
- DOE staff met with DNFSB staff on December 3, 1996 to discuss how decontamination and decommissioning activities are to be addressed and to discuss the integration of the

Order on Radioactive Waste Management with the proposed 10 CFR 834, "Radiation Protection of the Public and the Environment."

### 2.2.2 Meetings in Future Reporting Periods

The following interactions with the DNFSB or staff are anticipated during the next reporting period:

- DOE anticipates meeting with the DNFSB staff to discuss the draft DOE Order 435.1, Radioactive Waste Management, which will be distributed for review during the next reporting period.

### 3.0 SUMMARY OF COMMITMENTS DUE IN THE CURRENT REPORTING PERIOD

The following table summarizes the status of commitments that were due to be completed during the current reporting period. Appendix A provides a listing of all task initiatives committed to in the 94-2 IP and their status, as reported in DOE's Safety Issues Management System (SIMS). Two indicators are provided in the first column of the table. The first correlates with the commitment as numbered in the IP. The second number corresponds to the numbering system used in SIMS.

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#### Status of Task Initiatives Due October 31, 1996 - September 30, 1996

<b><i>IP Task #</i></b> <b><i>SIMS ID #</i></b>	<b>Title or Description</b>	<b>Due Date</b>	<b>Status</b>
<b><i><u>VI.B.3.b.2</u></i></b> R94-02 018	Policy and Guidance Document Issued for RCRA Sites	12/31/96	Completed. A guide for complying with DOE Order 5820.2A for onsite management and disposal was submitted to DNFSB on January 9, 1997.
<b><i><u>VII.B.3</u></i></b> R94-02 026	Process and Criteria for Headquarters' Review of Composite Analyses	10/31/96	Completed. A guide was submitted to DNFSB on November 1, 1996.
<b><i><u>VII.B.4.b.2</u></i></b> R94-02 028	PA Format and Content and Standard Review Plan	01/31/97	Completed. An interim guide was submitted to DNFSB on November 1, 1996.
<b><i><u>VIII.B.2</u></i></b> R94-02 034	DOE Low-Level Waste Projections Program Documentation	12/31/96	Completed. The program description was submitted to DNFSB on December 26, 1996.
Supplemental Commitment	Mixed Low-Level Waste Minimization Evaluation and Strategy	12/31/96	Completed. The document was submitted to DNFSB on December 26, 1996.

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## **4.0 TASK AREA STATUS**

### **4.1 Systems Engineering**

During this reporting period, the systems engineering effort made the transition from the development of the *DOE Low-Level Waste System Description Document* to development of the *Low-Level Waste Program Management Plan*. The Low-Level Waste Steering Committee, comprising representatives from Headquarters and DOE field organizations, has taken responsibility for preparation of the plan. The Steering Committee met in November to review and revise the proposed outline of the plan. The Plan will address the low-level waste system configuration, decision criteria for disposal of low-level waste, and describe how ongoing Departmental activities, such as re-engineering, are being integrated with the low-level waste program. Writing assignments for the various sections of the plan were made and individuals have begun preparing their sections

During the next reporting period, the *Low-Level Waste Program Management Plan* is to be completed. A draft will be compiled by early February and distributed for review. During the review, an audience of Headquarters and field staff broader than the Steering Committee will provide input on the plan. This will also include a review for consistency with the DOE Order 5820.2A revision effort. Comments will be evaluated and addressed and the *LLW Program Management Plan* will be issued by the end of March.

### **4.2 Complex-Wide Review**

The Final Complex-Wide Review (CWR) Report was transmitted to the DNFSB on May 17, 1996. This completed all CWR task initiatives. DOE-wide and site-specific corrective actions in response to the CWR were completed as part of the Systems Engineering task initiative.

### **4.3 Regulatory Structure and Process**

During the current reporting period, DOE completed the "Guidance for Complying with DOE Order 5820.2A, *Radioactive Waste Management*, for Onsite Management and Disposal of Low-Level Waste Resulting from Environmental Restoration Activities." This guidance addresses onsite disposal of waste derived from Resource Conservation and Recovery Act cleanups and supplements an earlier policy addressing onsite disposal of waste from Comprehensive Environmental Response, Compensation, and Liability Act activities. The policy and guidance from these memoranda will be incorporated in the DOE Order 5820.2A revision documentation.

The DOE Order 5820.2A revision low-level waste team met at two workshops in conjunction with the Order revision effort. The first workshop was held in Las Vegas, NV in October. Using the low-level waste system functional breakdown developed under the Systems Engineering task as a starting point, the team conducted a hazard and safety analysis. Each function was operationally described, then scenarios were developed by which a failure could develop. These were then analyzed to identify the weaknesses that contributed to the failure. At the second workshop, held in Rosslyn, VA in December, the hazard and safety analysis was used as the basis for a requirements analysis. Various sources of information, including

DOE Orders, external regulations, and international guidance, were used to identify requirements that would mitigate the weaknesses found in the hazard and safety analysis.

In the next reporting period, the requirements identified from the requirements analysis will be evaluated and combined to provide the basis for the low-level waste chapter of the DOE Order 5820.2A revision. The initial set of requirements will be reviewed for regulatory gaps and supplemented to add administrative requirements. A draft low-level waste chapter will be ready for review by the end of February.

#### **4.4 Radiological Assessments**

During the current reporting period, the Department completed two commitments in the Radiological Assessments task area. The Department issued the *Interim Review Process and Criteria for Department of Energy Low-Level Waste Disposal Facilities Composite Analyses*. This document establishes the process that will be used for the review of composite analyses which evaluate the combined potential radiological impact of a low-level waste disposal facility and other sources of radiation present at a DOE site.

In response to a DNFSB condition of acceptance of the May 1996 revision of the 94-2 Implementation Plan, the Department accelerated the issuance of the *Interim Format and Content Guide and Standard Review Plan for U.S. Department of Energy Low-Level Waste Disposal Facility Performance Assessments*. The guidance document was originally scheduled to be completed by the end of January 1997. However, since the Department was involved in the review of performance assessments during the summer and fall of 1996, it was agreed that it made sense to complete this document as soon as possible to build from and support those reviews. The document provides guidance for both the preparers and reviewers of performance assessments. Specifically, it describes the sections and types of information that should be included in performance assessments and addresses topics that have been the source of uncertainty and confusion for the preparers and reviewers of performance assessments. The guidance was issued as interim in recognition of the need for consistency with the Department's proposed 10 CFR 834, "Radiation Protection of the Public and the Environment," and the DOE Order 5820.2A revision. Key topics on which the staff is working towards resolution include the point of evaluation for compliance with the dose objectives and the time period over which compliance is to be evaluated.

A second DNFSB condition of acceptance of the revised Implementation Plan was that the Department should not drop the task in the original plan to evaluate ways of diversifying the Performance Assessment Peer Review Panel. Consistent with the spirit of this commitment, DOE Headquarters has taken steps to establish a DOE-staffed group that will have the responsibility for the review and recommending approval of performance assessments and composite analyses. As currently conceived, the group would be co-chaired by staff from the Offices of Waste Management and Environmental Restoration with the balance of the members coming from the DOE field organizations. The Peer Review Panel would continue to provide technical review at the request of the DOE review group. In December a memorandum was sent to the field requesting nominees to serve in the group.

During the next reporting period, DOE will proceed with its review of the Hanford Site 200 East Area low-level waste burial ground performance assessment. The DOE review group and

the Peer Review Panel will both be involved in the review.

#### **4.5 Low-Level Waste Projections**

During this reporting period, DOE completed two waste projection commitments from the DNFSB 94-2 Implementation Plan. On December 26, 1996, the low-level waste projections program guidance was transmitted to the DNFSB. This document establishes a framework for developing projections of volumes and characteristics of low-level waste which is consistent with projections work that has evolved over the last few years, such as the Baseline Environmental Management Report, the Ten-Year Plan, and the Core Data Bases. The intent is to provide improved, routine projections.

In the previous reporting period, the Department completed the *Low-Level Radioactive Waste Minimization Evaluation and Strategy*. Through staff discussions, it was agreed that a complementary document, a *Mixed Low-Level Waste Minimization Evaluation and Strategy*, would also be prepared. The report was transmitted to the DNFSB on December 26, 1996. The report evaluated waste minimization practices at selected production and cleanup sites, identified common mixed low-level waste generating activities, and recommended minimization practices. The document is one element supporting the 1996 Pollution Prevention Program Plan.

There are no near-term commitments in the Waste Volume Projections task area. Work is continuing on the development of a method to evaluate the radiological capacity of DOE's low-level waste disposal facilities. This is a September 1997 deliverable.

#### **4.6 Research and Development**

The Department is in the process of establishing centers of excellence at field locations for key waste management activities. The Idaho Operations Office will be the Low-Level Waste Center of Excellence. Discussions are ongoing between the site and Headquarters regarding the division of roles and responsibilities. It is contemplated that the DNFSB 94-2 research and development activities will be one of the first activities for which the Center takes responsibility. The Department expects to finalize arrangements and initiate work during the next reporting period.

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### **Appendix**

**Safety Issues Management System**

**Report for Recommendation 94-2**

**October 1, 1996 - December 31, 1996**

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This report is NOT available thru the Internet Version of the INFOBASE.

To obtain a hardcopy of the  
**Safety Issues Management System Report for Recommendation 94-2**  
**(October 1, 1996 - December 31, 1996)**

Contact **ANTHONY WEST** in the Office of the Departmental Representative by calling 202-586-7631, or forward a request via e-mail to [\*anthony.west@hq.doe.gov\*](mailto:anthony.west@hq.doe.gov).