

ANNUAL REPORT TO CONGRESS

Department of Energy Activities Relating to the Defense Nuclear Facilities Safety Board

Calendar Year 1995



Washington, DC 20585

March 1996

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[SOE LETTERHEAD]

March 18, 1996

The Honorable Al Gore, Jr.
President of the Senate
Washington, D.C. 20510

Dear Mr. President:

Section 316(b) of the Atomic Energy Act of 1954 as amended (42 U.S.C. § 2286e(b)) requires the Department of Energy to submit a written report to Congress concerning the Department's activities in response to Recommendations and other interactions with the Defense Nuclear Facilities Safety Board (Board). We are pleased to enclose the Department's Annual Report for calendar year 1995.

The Department has made significant progress on health and safety issues during 1995. The Department reduced the number of open Board Recommendations by 19 percent (from 21 to 17). Six Board Recommendations were closed as a result of Department activities while only two new Board Recommendations were received. The Department submitted six new Implementation Plans in 1995 in response to Board Recommendations the Department accepted in 1994 and 1995. The Department also established a number of broad-based initiatives to increase health and safety assurance. Key Department initiatives include the Strategic Alignment, Directives Reform, Contract Reform, the Department Standards Program, Integrated Safety Management of Research and Development Activities, and the Advisory Committee on External Regulation. In addition, the Department continues to make progress at improving the quality of communication and interaction between the Department and the Board.

If you have any questions, please contact me or have your staff contact Mr. Mark Whitaker, Departmental Representative to the Defense Nuclear Facilities Safety Board, at (202) 586-3887.

Sincerely,
Hazel R. O'Leary

Enclosure

I. INTRODUCTION

This is the sixth Annual Report to the Congress describing Department of Energy (Department) activities in response to Recommendations and other interactions with the Defense Nuclear Facilities Safety Board (Board). The Board, an independent executive-branch agency established in 1988, provides advice and recommendations to the Secretary of Energy regarding public health and safety issues at the Department's defense nuclear facilities. The Board also reviews and evaluates the content and implementation of health and safety standards, and other requirements, relating to the design, construction, operation, and decommissioning of the Department's defense nuclear facilities.

The Department has made significant progress on health and safety issues during 1995. The Department has established a number of broad-based initiatives to increase health and safety assurance. Key Department initiatives include the Strategic Alignment, Directives Reform, Contract Reform, the Department Standards Program, Integrated Safety Management of Research and Development Activities, and the Advisory Committee on External Regulation. The Department has also reduced the number of open Board Recommendations by 19 percent (from 21 to 17). Six Board Recommendations were closed as a result of Department activities while only two new Board Recommendations were received. In addition, the Department continues to make progress at improving the quality of communication and interaction between the Department and the Board.

Closed Recommendations

[Table 1](#) provides a summary status on Board Recommendations. Department activities culminating in 1995 led to closure of the following six Board Recommendations:

- Recommendation 90-2, Codes and Standards
- Recommendation 90-4, Rocky Flats Operational Readiness Reviews
- Recommendation 90-4, Rocky Flats Operational Readiness Reviews
- Recommendation 90-5, Rocky Flats Systematic Evaluation Program
- Recommendation 90-6, Rocky Flats Plutonium in the Ventilation Ducts
- Recommendation 92-6, Operational Readiness Reviews.

New Recommendations and Implementation Plans

The Department accepted two new Recommendations received from the Board during 1995:

- Recommendation 95-2, Safety Management
- Recommendation 95-1, Improved Safety of Cylinders containing Depleted Uranium.

The Department also completed six new Implementation Plans in 1995 in response to Board Recommendations the Department accepted in 1994 and 1995. These Plans define the Department's approach and schedule to resolve the associated safety issues. [Table 2](#) provides key dates for active Board

Recommendations.

Report Preview

The remaining portions of the annual report provide the contents described below:

- Section II, KEY DEPARTMENT INITIATIVES, describes broad-based Department activities that affect health, safety, and the environment.
- Section III, IMPLEMENTATION OF BOARD RECOMMENDATIONS, describes Department activities completed in 1995 to implement Board Recommendations accepted by the Secretary.
- Section IV, BOARD INTERFACE INITIATIVES, describes Department activities to maintain communications and improve interaction between the Department and the Board.
- Section V, CONCLUSIONS, provides a summary of the Department's accomplishments in 1995 and a preview of the Department's challenges for 1996.

**Table 1
Summary Status of Board Recommendations**

REC	SUBJECT	OPEN	CLOSED
90-1	Savannah River Operator Training		10/27/92
90-2	Codes and Standards		10/24/95
90-3	Hanford Waste Tanks		5/1/92
90-4	Rocky Flats Operational Readiness Reviews		2/16/95
90-5	Rocky Flats Systematic Evaluation Program		10/24/95
90-6	Rocky Flats Plutonium in the Ventilation ducts		10/24/95
90-7	Hanford Waste Tanks	*	
91-1	Safety Standards Program		10/27/92
91-2	Reactor Operations Management Plan		10/27/92
91-3	Waste Isolation Pilot Plant		10/27/92
91-4	Rocky Flats Building 559 Operational Readiness Review		5/1/92
91-5	Savannah River K Reactor Power Limits		4/7/93
91-6	Radiation Protection	*	
92-1	Operational Readiness of the HB-Line at Savannah River		10/27/92
92-2	Facility Representatives	*	
92-3	HB-Line Operational Readiness Reviews		2/3/93
92-4	Training and Qualification	*	
92-5	Discipline of Operations during Changes		10/24/95
92-6	Operational Readiness Reviews		10/24/95
92-7	Training and Qualification		11/4/93
93-1	Standards Utilization in Defense Nuclear Facilities	*	

93-2	The Need for Critical Experiments Capability	*	
93-3	Improving Technical Capability in Defense Nuclear Programs	*	
93-4	Environmental Restoration Management Contracts	*	
93-5	Hanford Waste Tanks Characterization Studies	*	
93-6	Maintaining Access to Nuclear Weapons Expertise	*	
94-1	Improved Schedule for Remediation	*	
94-2	Safety Standard for Low-Level Waste	*	
94-3	Rocky Flats Seismic and System Safety	*	
94-4	Deficiencies in Criticality Safety at Oak Ridge, Y-12	*	
94-5	Integration of Rules, Orders, and Other Requirements	*	
95-1	Improved Safety of Cylinders Containing Depleted Uranium	*	
95-2	Safety Management	*	

Table 2
Key Dates For Active Board Recommendations

REC	SUBJECT	REC DATE	RESPONSE DATE	IMPL PLAN DATE
90-7	Hanford Waste Tanks	10/12/90	12/3/90	12/2/94 (Rev. 1)
91-6	Radiation Protection	12/19/91	1/31/92	6/17/92 (Rev. 2)
92-2	Facility Representatives	5/28/92	7/20/92	11/5/92 (Rev. 1)
92-4	Multi-Function Waste Tank Facility at Hanford	7/6/92	8/28/92	11/7/94 (Rev. 1)
93-1	Standards Utilization in Defense Nuclear Facilities	1/21/93	4/22/93	7/19/93
93-2	The Need for Critical Experiments Capability	3/23/93	5/12/93	8/10/93
93-3	Improving Technical Capability in Defense Nuclear Programs	6/1/93	6/23/93	11/4/93
93-4	Environmental Restoration Management Contracts	6/16/93	8/6/93	11/8/93
93-5	Hanford Waste Tanks Characterization Studies	7/19/93	8/31/93	3/25/94*
93-6	Maintaining Access to Nuclear Weapons Expertise	12/10/93	2/2/94	7/5/94*
94-1	Improved Schedule for Remediation	5/26/94	8/31/94	2/28/95
94-2	Safety Standards for Low-Level Waste	9/8/94	10/28/94	3/31/95*
94-3	Rocky Flats Seismic and Systems Safety	9/26/94	11/18/94	6/30/95
94-4	Deficiencies in Criticality Safety at Oak Ridge, Y-12	9/27/94	11/18/94	2/24/95
94-5	Integration of Rules, Orders, and Other Requirements	12/29/94	2/21/95	7/21/95
95-1	Improved Safety of Cylinders Containing Depleted Uranium	5/5/95	6/29/95	10/16/95
95-2	Safety Management	10/11/95	1/18/96	*

* - Implementation Plans currently under revision/development

II. KEY DEPARTMENT INITIATIVES

The responsibility for safe operations at Department nuclear facilities lies with the Department and its contractors. The Department must provide an effective system for managing safety and must clearly define associated roles, responsibilities, and accountabilities. Line managers must be given the responsibility and held accountable for implementing health and safety requirements. These requirements must be clearly defined and must be commensurate with the hazards and risks associated with the work. Workers and managers need to possess the technical competence to assess and deal with the hazards associated with the operations for which they are responsible. Their duties include: 1) planning work with the proper attention to hazards; 2) setting priorities on the basis of risk; 3) providing for safety priorities in budget requests; 4) establishing clear environment, safety, and health expectations in contracts; and 5) setting up management systems to identify and track hazards and demonstrate performance. The Department strives for continual improvement in meeting its core responsibilities for protecting its workers, the public, and the environment.

The Board has had a significant positive impact on the Department's nuclear safety assurance by providing Recommendations. These Recommendations have played an important role in improving the Department's nuclear safety programs and operations. For each Recommendation that the Department accepts, the Department prepares an Implementation Plan that integrates desired improvements into its key facility safety activities already in progress. The Department must also continually balance safety improvement priorities and costs to ensure it makes the best use of its available assets in this time of reduced resources.

Key Department initiatives affecting health and safety are discussed further below and include: Strategic Alignment, Directives Reform, Contract Reform, the Department Standards Program, Integrated Safety Management of Research and Development Activities, and the Advisory Committee on External Regulation.

A. Strategic Alignment

In May 1995, the Department announced its plan for Strategic Alignment and Downsizing, "Saving Dollars and Making Sense." The Strategic Alignment actions are reducing layers of management, eliminating organizational redundancies, and integrating historically-isolated activities. Many opportunities to eliminate, consolidate, and downsize redundant activities across the Department have been identified, resulting in substantial staff reductions and savings over the next five years. In addition to reducing costs, these actions also improve performance, such as operational performance and health and safety performance, by improving focus on value-added activities. These actions allow the Department to better serve its customers as the Department delivers on its primary missions: protecting national security and reducing nuclear danger, enhancing long-term energy security, advancing the frontiers of scientific understanding, protecting the environment, and developing technologies that contribute to the country's economic productivity.

A number of Strategic Alignment actions are being implemented to eliminate unnecessary and redundant regulations and red tape that impose excessive cost burdens on the Department's performance of its missions. These actions include: simplifying, reducing, and reissuing departmental directives; instituting a fundamentally new approach called the Necessary and Sufficient Process to the application of standards at Department of Energy facilities; simplifying and streamlining the Department's audits and appraisals of its laboratories; introducing a wholesale change in procurement practices for Department contractors; working with the labs to remove costs from their operations as a result of simplified Department oversight; and moving toward external regulation of the Department's laboratories and facilities. A number of these initiatives to streamline burdensome oversight were already in progress. For example, many deregulatory actions in relation to the Department's governance of its laboratories and facilities

were initiated in response to the Task Force on Alternative Futures for the Department of Energy National Laboratories (the Galvin Task Force). Several of these key Department initiatives are discussed further below.

B. Directives Reform

The directives system documents requirements and guidance for management and technical functions. At the beginning of 1995, fifty-one directives addressed environment, safety, and health requirements, standards, and processes to be followed by the Department and its contractors. These documents tended to be prescriptive and process-oriented (rather than performance-oriented) and many were redundant or not generally applicable to all Department facilities. In an effort to clarify and streamline safety requirements, and in concert with the President's National Performance Review, the Department revised and consolidated all of its nuclear safety directives during 1995, significantly reducing the number of safety directives. This required careful technical review to retain the essential health and safety requirements and performance objectives, while translating necessary implementation approaches and methods into accompanying guides, technical standards, and handbooks. By identifying and clarifying the essential safety requirements, the Department and its contractors can better focus attention and resources on safety performance.

In a related effort, the Department is converting its most important nuclear safety requirements for its contractors into regulations pursuant to notice and comment rulemaking under the Administrative Procedure Act. By the end of 1995, four of these rules have been finalized: Procedural Rules for Department of Energy Nuclear Activities (10CFR820), Occupational Radiation Protection (10CFR835), Quality Assurance (10CFR830.120), and Contractor Employee Protection Program (10CFR708). Eight others are in process and anticipated to be published in 1996: Safety Analysis Reports (10CFR830.110), Unreviewed Safety Questions (10CFR830.112), Conduct of Operations (10CFR830.310), Technical Safety Requirements (10CFR830.320), Training and Qualification (10CFR830.330), Maintenance Management (10CFR830.340), Operational Occurrence Reporting (10CFR830.350), and Radiation Protection for the Public and the Environment (10CFR834). The conversion of nuclear safety directives to rules provides a more stable and predictable platform for requirements, and allows for better enforcement.

C. Contract Reform

In June 1993, the Secretary formed a Contract Reform Team to evaluate the contracting practices of the Department and to identify specific actions for improving those practices. The Report of the Contract Reform Team, "Making Contracting Work Better and Cost Less," was issued for implementation in February 1994. Forty-seven specific actions, with responsibilities and schedules, were identified to reform the contracting process. Among these actions was replacement of the Department's standard Management and Operating Contract with a new Performance-Based Management Contract and strengthening of the Department's systems for selecting contractors and managing contracts.

A central goal of Contract Reform is improving environment, safety, and health performance of the Department's contractors at less cost. Contract reform objectives in this area are: 1) assuring that the Department hires only contractors that are fully qualified to accomplish their environment, safety, and health responsibilities; 2) clearly identifying the agreed-upon environment, safety, and health requirements and clearly defining the key operating principles and performance-based management systems that the contractor will use to meet these requirements; 3) requiring contractors to use Department management systems for measuring environment, safety, and health performance; and 4) adequately funding each contract for these priorities. Similar to directives reform, these actions will permit better focus on the essential performance requirements, rather than over-emphasis on methods and procedures. The environment, safety, and health requirements will be clearly defined and the contractors will have more latitude and incentive to meet these requirements.

Requests for proposals now need to consistently include selection criteria on environment, safety, and health qualifications. Contracts need to consistently include the following:

- provisions for compliance with environment, safety, and health laws and rules and other agreed-upon standards/requirements;
- provisions requiring implementation of comprehensive environment, safety, and health programs;
- provisions regarding approval and execution of these programs, including associated Environment, Safety and Health (ES&H) Management Plans;
- provisions requiring flowdown of environment, safety, and health requirements to subcontractors; and,
- stop work notices for non-conformance with laws or the ES&H Management Plan.

A contractor ES&H Management Plan must delineate the management systems/procedures and the set of activities the contractor commits to undertake to meet the Department's ES&H performance expectations.

The Department has continued to make significant progress during 1995 in implementing the Contract Reform initiatives. As various contracts come up for renewal or competition, revised bid specifications and selection processes are instituted. For example, when the Department selected a General Integrating Contractor for the Rocky Flats site and a Management Contractor for the Nevada Test Site, contract reform initiatives were implemented. Other major defense nuclear facilities sites experiencing contract reform during 1995 include Savannah River and Hanford.

D. Department Standards Program

The Department Standards Committee, chaired by the Assistant Secretary for Environment, Safety and Health and consisting of senior executives from major Headquarters and Field Elements, was established to integrate the Department's standards efforts and establish the criteria for a Department standards program. The Criteria for the Department's Standards Program (DOE/EH/416) were established in August 1994. Elements of the program are in various stages of development. The Department Standards Committee is the element that links and coordinates major standards-related initiatives. It does so by developing and maintaining a plan for the actions, schedules, and responsibilities necessary to tie the current standards activities together in a coherent fashion. A primary task of the Department Standards Committee is to achieve a common understanding that the Department's work must be planned, performed, and appropriately documented in accordance with agreed upon standards to ensure adequate protection of the safety and health of the worker, the public, and the environment.

The Department's Standards Program calls for Department line management and contractor management to implement necessary and sufficient sets of standards to provide protection during the accomplishment of work, including all requirements imposed by law. To meet this program criterion, the Department Standards Committee has developed a Department-wide process to identify and implement standards that are necessary and sufficient to adequately protect workers, the public, and the environment (Necessary and Sufficient Process). This process has built upon existing standards processes without adopting a "one-size-fits-all" approach and has been refined through lessons-learned from nine pilot demonstrations conducted during 1995. The Department Standards Committee completed development of the Necessary and Sufficient Process in December 1995 and has recommended approval for initial use. Departmental approval and subsequent initiation of the implementation of the Necessary and Sufficient Process are expected in early 1996.

The Necessary and Sufficient Process uses total quality management principles to empower teams of

people at the lowest level who are familiar with the work and hazards. The starting point is a clear understanding of the work to be performed, such as construction, operation, manufacturing, research, transportation, or remediation. A team analyzes the work plan to determine potential hazards and identify ways to remove or control those hazards. This team includes individuals with detailed knowledge of the work to be done, subject matter experts, resource providers, and when appropriate, people affected by the work hazards. This process is intended to be both cost-effective and flexible, and to increase ownership of the standards identified and implemented.

E. Integrated Safety Management of Research and Development (R&D) Activities

Early in 1995, the Department and its three nuclear weapons laboratories held a series of meetings with the Board which focused on effective means of managing the safety of R&D in support of National Security missions. The Board, in a letter to the Department dated April 28, 1995, reported the results of these discussions and requested the Department prepare a report responding to the issues raised in their letter. In response, the Department, under the leadership of the Manager, Albuquerque Operations Office, chartered a "Working Group" of line management representatives from the Department and the nuclear weapons laboratories to develop the framework of an integrated safety management system tailored to the needs of the nuclear weapons laboratories. The Department provided a summary report, "Managing the Safety of Defense Nuclear Research and Development Activities," in September 1995, which describes how the Department will proceed in developing a set of essential elements for integrated safety management systems.

The Working Group continues to work together closely to develop a common understanding of how to accomplish integrated safety management for R&D activities. They have defined the fundamental premise of Integrated Environmental Protection, Safety and Health Management as the use of sound management principles that systematically integrate environment, safety and health into management and work practice at all levels so that missions are accomplished with an adequate level of protection to the public, the worker and the environment. The Working Group has developed thirteen guiding principles, including descriptions, that if implemented, systematically integrate environment, safety and health assurance into R&D management and work practices at all levels. These principles fall into the categories of management accountability, Department and laboratory relationships, competence commensurate with responsibility, and appropriate and comprehensive requirements. The Working Group is continuing its activities to further develop the framework for an integrated safety management system, including a needed glossary of key terms and definitions. Additionally, the nuclear weapons laboratories are continuing their efforts to translate the guiding principles into the work practices and management system at their respective laboratory.

This effort towards an integrated safety management system is closely related to other departmental initiatives and Board activities. Accordingly, the Working Group is closely coordinating its work with related activities within the Department, including the Department Standards Committee and the response to Board Recommendation 95-2 to share lessons and to support efforts to developing an integrated safety management system.

F. Advisory Committee on External Regulation

In January 1995, the Secretary of Energy charged the Advisory Committee on External Regulation to provide advice, information, and recommendations on two questions: whether and how new and existing Department facilities and operations might be externally regulated to ensure nuclear safety. The Committee was drawn from a cross section of public, Federal, State, Tribal, industrial, and academic sectors, deliberately chosen to represent a diverse range of public and occupational health and safety, facility safety, environmental, and regulatory backgrounds. The Committee held eight meetings in nine months, all of which were open to the public. Sixty members of stakeholder organizations and the public addressed the Committee and presented their views and objectives about Department safety and regulation.

The Committee's December 1995 report, "Improving the Regulation of Safety at DOE Nuclear Facilities," offered a number of relevant observations and recommendations to strengthen both the regulation and the assurance of safety at Department facilities. The Committee's three fundamental recommendations were:

- Essentially all aspects of safety at the Department's nuclear facilities and sites should be externally regulated.
- Existing agencies rather than a new one should be responsible for external regulation.
- Under any regulatory scheme, the Department must maintain a strong internal safety management system.

The Secretary strongly endorsed each of the three major recommendations and indicated that the Department will have a course of action for external regulation by March 20, 1996 and an implementation package by May 15, 1996. The Committee report confirms that a well designed and effective system of external regulation of all aspects of nuclear safety-facility safety, worker safety, and environmental protection-is necessary to ensure public credibility and to prevent potential future accidents, contamination and exposures. The Committee considered a number of criteria in reaching the conclusion for external regulation, including safety, credibility, stability, accountability, efficiency, focus, flexibility, and practicality. The report's recommendation for external regulation is based primarily on considerations other than cost benefit, namely that: 1) the Department should be externally regulated for the same reasons as industry and other Federal facilities and sites, 2) credibility is critical to success of both safety regulation and Department's missions, and 3) regulation of safety must both be effective and promote efficiency.

External regulation can provide the focus required to remove some of the greatest obstacles the Department now faces in trying to do its job as effectively as possible: the lack of stability in safety policy and management and the confusing, complex, and evolving internal and external regulation and oversight that now consume so much of the Department's resources without ensuring that safety itself is effectively and efficiently achieved. Freed of the burden of regulating itself, the Department would be able to concentrate on carrying out its missions more effectively. The Committee also recognized that the benefits of external regulation, "such as independent assessment and the credibility that flows from this, will entail additional costs to maintain the external regulators."

The Committee did not determine whether the Nuclear Regulatory Commission or Defense Nuclear Facilities Safety Board could more readily undergo the necessary changes to become the Department's external regulator for facility safety. Its report presented a clear description of the relative benefits of each of these two potential regulators. A Department task force, led by the Acting Under Secretary, is preparing a response to the Committee's report and developing a detailed plan to move the Department to external regulation. The task force is scheduled to complete the first phase of this response by March 20, 1996.

The Committee acknowledged that non-nuclear hazards at Department of Energy sites represent important and pervasive threats to workers. Any future regulatory regime must take these into account. The Committee underscored that a strong internal Department safety management system is essential under any external regulatory regime and noted with favor several Department of Energy efforts already underway to strengthen and streamline that internal system. The Committee recognized that there are a number of ongoing efforts to improve effectiveness of internal health and safety systems, including clarification of roles and responsibilities, directives reform, contract reform, use of a "necessary and sufficient" closure process to institutionalize the use of a graded approach to requirements determination, and internal oversight to hold line managers accountable for performance.

III. IMPLEMENTATION OF BOARD RECOMMENDATIONS

A. Recommendation Closures

Department activities culminating in 1995 led to Board closure of the following six Board Recommendations:

- Recommendation 90-2, Codes and Standards
- Recommendation 90-4, Rocky Flats Operational Readiness Reviews
- Recommendation 90-5, Rocky Flats Systematic Evaluation Program
- Recommendation 90-6, Rocky Flats Plutonium in the Ventilation Ducts
- Recommendation 92-5, Discipline of Operations During Changes
- Recommendation 92-6, Operational Readiness Reviews.

Recommendation 90-2, Codes and Standards

In March 1990, the Board issued Recommendation 90-2, which deals with the evaluation and implementation of standards relating to the design, construction, operation, and decommissioning of defense nuclear facilities. The Recommendation calls for the Department to identify current standards, determine their adequacy, and assess compliance with current standards. The Department's Implementation Plan was based on the development of Standards/Requirements Identification Documents at identified facilities. After requirements identification, each of these facilities was to perform an Order Compliance Self-Assessment to determine its level of implementation.

By 1995, the Department had developed associated direction and guidance to ensure consistent application of its approach and had completed requirements identification and order compliance assessment at many of the identified facilities. During this implementation, the Department concluded that real drawbacks existed in the application of this approach to some types of activities, such as research and development activities, environmental cleanup activities, and low-hazard facility operations. This realization ultimately led the Department Standards Committee to develop the Necessary and Sufficient Process. The Board addressed the Department's ongoing implementation and use of the Standards/Requirements Identification Document methodology in subsequent Board Recommendations. On October 24, 1995, the Board closed Recommendation 90-2, consolidating the schedule for development and implementation of Standards/Requirements Identification Documents with Recommendation 94-5, Integration of Rules, Orders, and Other Requirements, and with additional information being incorporated into Recommendation 95-2, Safety Management. In early 1996, the Board notified the Department that Recommendation 90-2 commitments would remain in effect until ultimate disposition of remaining actions are addressed in the Recommendation 95-2 Implementation Plan.

Recommendation 90-4, Rocky Flats Operational Readiness Reviews

Board Recommendation 90-4 identifies the need for an Operational Readiness Review at Rocky Flats. The Department's Implementation Plan calls for a review of procedures, plant modifications,

operator training, and accident analyses prior to resumption of facility operations. This Implementation Plan successfully guided Department Operational Readiness Reviews for Rocky Flats Buildings 559 and 707. With the resumption of operations authorized for Building 559 in 1992 and Building 707 in 1994, all commitments were completed and closed. Experience gained in response to this Recommendation was applied in developing the new departmental Order 425.1, "Startup and Restart of Nuclear Facilities," as part of the Department's actions in response to Recommendation 92-6, Operational Readiness Reviews.

Recommendation 90-5, Rocky Flats Systematic Evaluation Program

This Recommendation calls for an upgrade of the Rocky Flats design and operations through the use of a Systematic Evaluation Program for improving defense in depth of design and positively influencing safety. Since 1990, the Department had established a Systematic Evaluation Program at Rocky Flats and had performed a number of evaluations on various facilities and functional areas. The scope of the Department's Implementation Plan diminished significantly with the changing mission of Rocky Flats from production to decontamination, decommissioning, environmental restoration, and economic development. The only remaining valid portions of the original Systematic Evaluation Program related to Building 371, which was the prime subject of subsequent Board Recommendation 94-3. The Department and the Board concluded in 1995 that this Recommendation had been overcome by events and should be closed.

Recommendation 90-6, Rocky Flats Plutonium in the Ventilation Ducts

This Recommendation addresses criticality safety at Rocky Flats, specifically within the ventilation ducts. The Department implemented a program of analysis, remediation, and monitoring to address these safety issues. "Prior to resumption" duct cleanup requirements had been completed at two buildings, Buildings 559 and 707. Sampling, analysis, and corrective actions had been performed at other buildings, including Buildings 371, 771, and 776.

While the Department's original Implementation Plan was conceived to prepare facilities to resume full operations, the mission of Rocky Flats was changed from production to decontamination, decommissioning, environmental restoration, and economic development. Due to these changes, the potential to increase plutonium holdup in ventilation ducting is no longer significant.

Rocky Flats has institutionalized a program for evaluating ventilation duct safety. Rocky Flats has extensive experience and expertise in performing these evaluations and defining corrective actions. Refined methods of measurement have been proven, and existing measurements do not indicate potential for criticality, even under accident conditions. In 1995, the Department and the Board concluded that the primary objectives of this Recommendation had been accomplished and it was closed.

Recommendation 92-5, Discipline of Operations During Changes

This Recommendation calls for the Department to focus on implementing disciplined operations in light of the changing missions of the Department's defense nuclear facilities. The Department's Implementation Plan committed to implement the Conduct of Operations Order throughout the complex in a graded manner. In 1994, fewer than 30 percent of the Department's facilities had fully implemented conduct of operations. In 1995, over 50 percent of the facilities achieved full implementation. Program and facility managers who authorize changes in facility status understand the associated Conduct of Operations expectations.

Conduct of Operations performance levels across the complex are monitored through occurrence reporting and performance indicators. Conduct of Operations remains a focus of other ongoing Department oversight and management programs, including the Department's Facility

Representative program, the Environmental Management Operations Assessment program, the Office of Environment, Safety and Health Independent Oversight programs, and facility startup and restart readiness reviews. Conduct of Operations is now part of the Department's safety culture. In 1995, the Department and the Board concluded that the primary objectives of this Recommendation have been accomplished. The Board addressed further improvements in Conduct of Operations in Recommendation 95-2, Safety Management, issued in October 1995.

Recommendation 92-6, Operational Readiness Reviews

This Recommendation calls for development of rules, procedures, orders, and directives to govern the safety aspects of Operational Readiness Reviews, the subject of several previous Board Recommendations. The Department's Implementation Plan identified steps to capture and institutionalize the good practices and lessons learned from previous Operational Readiness Reviews. By 1995, the Department had completed all Implementation Plan actions and recognizes its Operational Readiness Review capabilities as an important strength of the Department's safety program.

Department direction and guidance on Operational Readiness Reviews (Department Order 425.1 and Standard 3006-95) have been promulgated and have resulted in significant improvements in the preparation of facilities for startup and restart. The Department had also developed Test Readiness Assessment and Weapons Assembly/Disassembly Readiness Assessment procedures. The Department has successfully implemented its program at many facilities and continues to improve the rigor of its readiness review processes. In 1995, the Department and Board concluded that the primary objectives of this Recommendation had been accomplished and it was closed.

B. New Recommendations and Implementation Plans

The Department accepted two new Recommendations received from the Board during 1995:

- Recommendation 95-2, Safety Management
- Recommendation 95-1, Improved Safety of Cylinders containing Depleted Uranium.

The Department also submitted six new Implementation Plans in 1995 in response to Board Recommendations the Department accepted in 1994 and 1995. These plans define the Department's approach and schedule to resolve the associated safety issues. Table 2 provides key dates for active Board Recommendations.

Recommendation 95-2, Safety Management

Recommendation 95-2 combines and modifies previous Board Recommendations (90-2, 92-5, and 94-5) concerning use of standards and conduct of operations. The Recommendation calls for: 1) an institutionalized process for ensuring that environment, safety and health requirements are met, 2) graded safety management plans for conduct of operations, 3) a prioritized list of facilities based on hazards and importance, 4) direction and guidance for the safety management process, and 5) measures to ensure availability of technical expertise to effectively implement the streamlined process.

The Department's January 1996 response accepted most of the elements of the Recommendation, but specifically did not accept those elements of the Recommendation that prescribed specific methods that could be used to accomplish the accepted objectives. Over the past three years, the Department had developed and implemented a number of systems that are designed to achieve an

acceptable level of safety throughout Department operations. Key among these policy initiatives and programs are directives reform, the Necessary and Sufficient Process, including the companion process relating to Standards/Requirements Identification Documents, and contract reform, including performance-based contracting. The Department's acceptance of this Recommendation reflects the recognition of the need to further institutionalize the process of incorporating environment, safety and health considerations into the planning and execution of activities.

The Department has formed an Implementation Plan Team, consisting of representatives of the various key Headquarters and Field Elements. This team is developing an integrated safety management process that incorporates ongoing safety management programs and initiatives, and provides adequate assurance, flexibility, and cost-effectiveness. The Department anticipates working closely with the Board to understand their issues and concerns and thereby develop a workable safety management process.

Recommendation 95-1, Improved Safety of Cylinders containing Depleted Uranium

Recommendation 95-1 identifies the Board's concerns about the storage conditions and ultimate disposal of depleted uranium hexafluoride in long-term storage at Portsmouth, Ohio; Paducah, Kentucky; and Oak Ridge, Tennessee. The Department is storing approximately 560,000 metric tons of depleted uranium hexafluoride in solid form in approximately 46,500 steel cylinders at the three gaseous diffusion plants. The Recommendation calls for 1) repainting or recoating the cylinders, 2) implementing protective measures to prevent future damage or corrosion, and 3) conducting a study on long-term storage of the depleted uranium.

The Department had initiated a program in 1992 to ensure the safety of the long-term storage of depleted uranium hexafluoride. The Department's response to the Board's Recommendation is to improve the cylinder maintenance program through a systems engineering approach to risk management. These improvements are being developed and instituted concurrently with program activities that are underway. The first step in this systems engineering approach to risk management is development of a Systems Requirements Document, which was completed in November 1995. Other significant accomplishments in 1995 include:

- All full, depleted uranium hexafluoride cylinders at the gaseous diffusion plant storage sites have been removed from ground contact, with none showing evidence of a breach. An improved storage yard design which provides an adequate inspection configuration is in use at the Paducah site and is approximately half full.
- Approximately 1,600 cylinders have been relocated and restacked into an adequate configuration for visual inspection at Paducah. A new storage yard is complete at Portsmouth, allowing reconfiguration to proceed.
- Painting of accessible, skirted cylinder ends has begun with approximately 1,750 painted at Portsmouth and 225 at Paducah since July 1995.
- Procedures have been revised to direct the safe handling of degraded cylinders, and personnel have been trained to these revisions.
- The Systems Engineering Management Plan, the second step in the disciplined systems engineering approach to risk management, is under development.

The Department's 95-1 Implementation Plan requires more than one year to implement due to the magnitude of the Department's actions and the deliberate, systems engineering approach being

employed to establish and implement handling and storage solutions. The final deliverable of this Implementation Plan-approved safety analysis reports on the technical adequacy of depleted uranium hexafluoride storage-is scheduled for completion in March 1997.

Recommendation 94-5, Integration of Department of Energy Safety Rules, Orders, and Other Requirements

This Recommendation states the Board's belief that further Department actions were needed to ensure there is no relaxation of commitments made to achieve compliance with requirements of Orders while proposed rules are undergoing the development process. In particular, the Board expressed concern that activities underway to develop and comply with Standards/Requirements Identification Documents be continued. This Recommendation also calls for several actions related to safety management policy and process, the subject of subsequent Board Recommendation 95-2.

The Department's Implementation Plan, issued in July 1995, describes the development of the "Necessary and Sufficient Closure Process" for determining safety requirements for facilities and activities. Much of the focus on instituting the safety management process has shifted to Recommendation 95-2, received by the Department in October 1995. A key activity being worked under the 94-5 Implementation Plan is development of a revised, updated Functions, Assignments and Responsibilities Manual. Some of the key accomplishments related to this Recommendation during 1995 are:

- An Action Matrix outlining the action items approved by the Department Standards Committee to integrate and coordinate standards-related activities was issued in September 1995.
- Policy statements 410.1, "Developing Nuclear Safety Requirements," and 450.2, "Identification, Implementation and Compliance with Environment, Safety and Health Requirements," have been drafted and Board comments are being resolved.
- Departmental Order 251.1, "Directives System," was issued in October 1995 to explain the relationship between policy, requirements, guidance, technical standards, and implementation processes and expectations in a more complete and consistent manner.
- The Directives System Manual, DOE M 251.1, which fully describes the Directives System structure and the hierarchy of related documents which were identified as a Board concern, was issued in October 1995. The manual also describes the Order Exemption process.

Remaining actions from the 94-5 Implementation Plan include finalizing the associated Department Policy Statements, completing the Functions, Assignments and Responsibilities Manual, and determining an acceptable transition for Recommendation 90-2 items.

Recommendation 94-4, Deficiencies in Criticality Safety at Oak Ridge, Y-12

Recommendation 94-4 summarizes the Board's concern with criticality safety and conduct of operations at the Y-12 Facility at Oak Ridge. The Recommendation acknowledges that the Department and its contractor have taken steps to correct deficiencies and encourages more aggressive and comprehensive management actions.

The 94-4 Implementation Plan presented an aggressive schedule of near-term actions to support the Y-12 resumption effort. The Plan also presented a path of programmatic improvements to assure the achievement of an adequate level of safety at Y-12 over the long-term. The Implementation

Plan includes assessments of the level of conduct of operations at Y-12, reviews of personnel training, and compliance evaluations on Operational Safety Requirements, Criticality Safety Analyses, and operating procedure controls. The Department is using contractor self-assessments, as well as Operational Readiness Reviews and Readiness Assessments, by Department managers and technical staff, and independent experts, to ensure that needed program improvements and culture changes are institutionalized.

The most significant accomplishment for 1995 was the resumption in September of operations with two of the five primary mission areas at the Y-12 facility: Receipt, Storage, and Shipping; and Depleted Uranium Operations. A third primary mission area, Quality Evaluation, is being carried out under special operating procedures. Resumption efforts continued on the remaining two mission areas: Disassembly and Assembly (scheduled for resumption by April 1996); and Enriched Uranium Operations.

Other significant accomplishments in 1995 include the following:

- Independent assessments of Criticality Safety Approvals/Operational Safety Requirements and Conduct of Operations were completed in the Fall of 1995. Final reports were delivered in December 1995. Corrective action plans were being developed at the end of 1995.
- Training Assistance Team assessments were completed for key departmental personnel at Y-12 and Headquarters in August and September 1995, respectively, and corrective action plans have been completed.
- Y-12 staff implemented numerous safety program and process improvements, including associated procedures and training, in the areas of conduct of operations, criticality safety, and operating safety requirements. The successful completion of the readiness assessments for the Receipt, Storage, and Shipping and Depleted Uranium Operation mission areas attests to the value added by these improvements.

The 94-4 Implementation Plan requires more than one year to implement due to the magnitude of the Department's actions involved and the related culture changes. Actions for Enriched Uranium Operations, the most complex of the five missions areas, involve upgrade of numerous requirements, criticality safety analyses, and operating procedures. Full resumption of the final mission area at Y-12-Enriched Uranium Operations-is expected to be completed by 1997.

Recommendation 94-3, Rocky Flats Seismic and Systems Safety

Recommendation 94-3 identifies the Board's concerns with the Systematic Evaluation Program being conducted at Rocky Flats. This program, which was initiated at the site in response to Recommendation 90-5, is a review of older facilities using current safety standards to assure safe operations. As the mission of Rocky Flats has changed, the 90-5 Implementation Plan had also been revised to address more directly the facility's changing role. Building 371 is now being considered for a unique role as the storehouse for the largest single accumulation of plutonium in the Department complex. There is a need to formulate an integrated plan to identify potential hazards from natural phenomena at Building 371 and to enhance protection of the building and its contents.

The 94-3 Implementation Plan employs a two phased approach to resolution of the issues in the Recommendation. Phase 1 has been detailed in the Implementation Plan. All aspects of the Recommendation are considered in Phase 1, although not all will be resolved during this phase. The objective in Phase 1 is to determine whether the structure, systems, and components for the

proposed mission of Building 371 have sufficient seismic capability to justify going forward with more detailed evaluations and to ensure that any upgrades required to Building 371 are commensurate with the hazard posed by the facility's mission.

The principal accomplishment for 1995 is completion of analyses that resulted in the determination that Building 371, with some upgrades, has sufficient seismic capability for its proposed interim storage mission. An alternative solution for interim storage, the construction of a new passive storage vault, has emerged as a viable option. Both options are being evaluated and the Department expects to reach a final decision in 1996. An Integrated Program Plan reflecting this decision is being developed and is currently scheduled for completion by April 1996. Delivery of the Integrated Program Plan completes the Department's Implementation Plan commitments for this Recommendation.

Recommendation 94-2, Conformance with Safety Standards at Low-Level Nuclear Waste and Disposal Sites

Recommendation 94-2 expressed the Board's concern with the programs for the burial of low-level radioactive waste at defense nuclear facilities. The Recommendation calls for a comprehensive, complex-wide review of low-level waste management, similar to that conducted by the Department on spent fuel. The Board also emphasized the need to improve upon requirements for low-level waste storage, improve modeling of radionuclide migration, and evaluate current storage methods and compliance with relevant Department directives.

Significant accomplishments on the Department's Implementation Plan during 1995 include:

- In July 1995, the Department issued an interim policy statement to define the roles and responsibilities for low-level waste management and disposal. This policy addresses all low-level wastes, including mixed low-level wastes, and clarified existing Department directives on this subject.
- The Department had developed the qualitative, risk-based methodologies and tools for conducting the Complex-Wide Review to identify low-level waste management and storage vulnerabilities. The review teams have been selected and field implementation is scheduled to begin in early 1996.
- In December 1995, the Department issued for review and comment throughout the complex a draft Systems Requirements Document, a comprehensive set of requirements for low-level waste management.
- The Department has completed a preliminary catalogue of ongoing Department research and development activities relevant to low-level waste management.

The current Implementation Plan is being revised to better address key technical issues involved in performing low-level waste performance assessments. These issues include: 1) use of the Comprehensive Environmental Response, Compensation, and Liability Act methodologies for pre-1988 wastes, and 2) guidance and criteria on analyzing source term interactions. The revised Implementation Plan is anticipated to be completed by April 1996.

The Department's current Implementation Plan requires more than one year to implement due to the magnitude and complex-wide nature of the actions required. Department policy and precedents for low-level waste management, established through implementation of this plan, should have long-term impact. The Department anticipates that completion and approval of low-level waste

assessments at all sites and locations throughout the complex may extend through the year 2000.

Recommendation 94-1, Improved Schedule for Remediation in the Defense Nuclear Facilities Complex

Recommendation 94-1 addresses the Department's need to improve the schedule for remediating situations involving the storage of nuclear materials within the defense nuclear facilities complex. The Recommendation calls for an accelerated schedule for stabilizing and repackaging specific liquids and solids containing fissile material and other radioactive substances in spent fuel storage pools, reactor basins, reprocessing lines, and various other buildings once used for processing and weapons manufacture. The Department is faced with increased requirements, competing needs, and additional challenges in remediation and storage of materials from disassembled nuclear weapons, materials that still remain in the production pipelines through which the process flow has been halted, and reclamation of former production sites, equipment, and stored products and wastes.

The Nuclear Materials Stabilization Task Group (NMSTG) was established on February 28, 1995 to integrate the Department's programs for stabilizing excess nuclear material to achieve safe, stable states for interim and long-term storage pending ultimate disposition. The NMSTG has established a program to integrate complex-wide actions that includes: 1) developing a corporate strategy to address stabilization issues; 2) evaluating and integrating facility stabilization capabilities; 3) procuring standardized equipment to support plutonium oxide stabilization and packaging for long-term storage; and 4) focusing research and development efforts on the technical challenges facing stabilization, storage, and disposition of plutonium and other nuclear materials.

The Department has made excellent progress in 1995 in implementing the Recommendation. Significant accomplishments for 1995 include the following:

- Completed 51 of 152 (over 33 percent) total plan milestones in 1995.
- Disposed of 22,700 liters of solutions containing plutonium and uranium from the Plutonium Uranium Extraction (PUREX) plant at Hanford by neutralization and transfer to the tank farms.
- Moved 259 units of fuel from CPP-603 at Idaho to improved storage conditions.
- Completed interim corrective measures to remove the potential for accidental criticality at the Molten Salt Reactor Experiment at Oak Ridge.
- Repackaged 256 items at Rocky Flats where plutonium metal was in direct contact with plastic to remove potential for hydrogen gas generation.
- Vented 2,745 residue drums at Rocky Flats to mitigate hazards associated with hydrogen gas generation and drum pressurization.
- Restarted the F-Canyon and FB-Line facilities at Savannah River to support stabilization of plutonium solutions and other materials. Commenced stabilization of 320,000 liters of solution stored in F-Canyon.
- The NMSTG Research and Development (R&D) Plan, issued in November 1995, identifies technological needs, technology programs already in place, and the "gaps" that should be addressed by R&D initiatives. The Plutonium Focus Area, chartered in October 1995, is tasked with recommending solutions and monitoring progress in achieving solutions to the technical issues in the R&D Plan.

The 94-1 Implementation Plan requires more than one year to implement due to the extent and magnitude of the Department's actions involved at many sites and facilities across the complex. The schedule and milestones provided in the Department's Implementation Plan show completion of the planned activities in the year 2002.

C. Other Active Implementation Plans

Recommendation 93-6, Maintaining Access to Nuclear Weapons Expertise in the Defense Nuclear Facilities Complex

This Recommendation expresses the Board's concern that the unique talents and experience of personnel have been and are being lost from the Department and its weapons complex as a result of changes in the Department's mission and emphasis, and its subsequent downsizing. The Recommendation emphasized the need to retain access to and capture the unique knowledge of those individuals who have been engaged in weapons assembly, disassembly, and testing activities to avoid future safety problems in these areas. Retention of this information contributes to the Department's present and future capability to safely manage and maintain the weapons stockpile and disassemble existing weapons.

The Department's 93-6 Implementation Plan identified activities in nine task areas across six site locations. In 1995, the Department identified critical nuclear weapons skills, documented unique weapons knowledge, and developed programs to maintain the Department's access to personnel having these skills and knowledge. Specific accomplishments in 1995 include:

- The Department identified critical skills and knowledge for nuclear weapons assembly, disassembly, and testing.
- The Department reviewed the impact of the recent loss of Headquarters personnel; this resulted in the Defense Programs staffing plan.
- The Department issued Notice N3131.1, "Access to Skills, Knowledge and Abilities of Retired Scientists and Engineers."
- The Department documented its nuclear test safety readiness capabilities.
- The Department evaluated the adequacy of administrative controls and engineered safeguards for providing assurance of nuclear explosive safety. The conclusion is that the effectiveness of qualified and experienced personnel using approved administrative controls would be enhanced with engineered safeguards.
- The Department's Albuquerque Operations Office and the Nevada Operations Office developed Recommendation 93-6 Archive Program Plans. These plans were approved by the Principal Deputy Assistant Secretary for Defense Programs, and the Operations Offices have been directed to proceed with implementation.
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A revision to the Recommendation 93-6 Implementation Plan is under development with approval expected in early 1996. The Department's field offices and laboratories have participated extensively in revisiting the remaining open actions and schedules. Although the original Implementation Plan schedule was overly ambitious, the field offices and laboratories are confident

they can support the new plan and schedule. As previously reported, this Implementation Plan has required more than one year to implement due to the multi-site nature of the planned actions. The planned Department actions are currently scheduled to be completed by the end of September 1996.

Recommendation 93-5, Hanford Waste Tanks Characterization Studies

This Recommendation encourages the Department to expedite and complete safety-related sampling analysis, with a priority placed on tanks on the watch list. The Board requested completion of characterization of the watch list tanks within two years. This Recommendation also calls for expansion of the laboratory productivity. Lastly, this Recommendation seeks integration of these characterization efforts with other systems engineering tasks.

The physical characteristics of the waste in the tanks, the distribution of the various types of waste material in the tanks, and the limited locations for sampling have hampered progress meeting commitments in the Recommendation 93-5 Implementation Plan. The Department fell short of meeting a major Recommendation 93-5 commitment to characterize all watch list tanks by October 1995. Problems early in 1995 with sampling equipment reliability and effectiveness contributed to the slow progress. Also, too much emphasis on collecting samples rather than integration of other sources of data (historical records, modeling data, etc.) with analysis of samples impeded an understanding of safety related phenomenology. Finally, a lack of qualified technical expertise contributed to slow progress resolving the aforementioned problems. These problems prompted the Department to begin revising the Recommendation 93-5 Implementation Plan late in 1995 and the revision is expected to be completed by April 1996. In addition, the Department commissioned a group of experts from private industry and academia, and led by the Pacific Northwest National Laboratory, to develop an *ab initio* characterization strategy, including recommendation for expediting characterization of the high-level waste tanks at Hanford. This evaluation is due by mid-1996.

During 1995, the Department enhanced the capability and efficiency of tank characterization for the Hanford waste tanks. Specific accomplishments in 1995 include:

- The technical expertise was improved through the use of outside technical resources, including the University of Washington, the Tank Characterization Advisory Panel, the Tank Sampling Advisory Panel, and workshops for senior scientists in relevant fields.
- Three Rotary Mode Core Sampling Systems were placed in service.
- Modifications were completed on the core sampling truck to improve its availability.
- Three new drilling crews were hired and all crews were trained and qualified in accordance with Department training directives.
- Analytical laboratory capacity was increased.

As a result, 93 tanks were sampled in 1995, a significant increase over the 24 tanks sampled in 1994.

The Recommendation 93-5 Implementation Plan is currently under revision to reflect lessons learned over the past two years of implementation. The estimated completion date of Implementation Plan activities is currently under evaluation as part of the revision effort. As previously reported, completion of the Department's Implementation Plan has required more than one year due to the technical complexities of characterizing and analyzing the Hanford waste tanks.

Due to the extensive sampling plans that remain, this Implementation Plan is expected to remain open beyond 1996.

Recommendation 93-4, Environmental Restoration Management Contracts

Recommendation 93-4 concerns health and safety factors associated with the Department's management and direction of environmental restoration management contracts. Recommendations also were included to review recent Uranyl Nitrate Hexahydrate accidents at Fernald, develop an operational readiness plan to resume Uranyl Nitrate Hexahydrate activities, and improve the Facility Representatives program at Fernald.

The Department's Implementation Plan formalizes and strengthens its technical management of environmental restoration management contracts through development of detailed project and technical management plans; allocation of qualified technical personnel to manage the contracts at both Headquarters and Field levels; and application of lessons-learned from the Department's experience at Fernald to future contracting activities. Principal accomplishments for 1995 on this Implementation Plan were:

- Fernald's restart procedure was developed based on Order 5480.31, "Startup and Restart of Nuclear Facilities," and the Operational Readiness Review Standard. Subsequent to the management and operating contractor's Operational Readiness Review, Headquarters conducted the Operational Readiness Evaluation during June 5-9, 1995, for the Uranyl Nitrate Hexahydrate Stabilization Project. Uranyl Nitrate Hexahydrate processing at Fernald was authorized for restart on June 15, 1995, and was completed on August 30, 1995.
- The Richland Technical Management Plan was updated in 1995, in concert with the Technical Management Plan developed by Fernald in 1994. A generic Technical Management Plan is updated annually by the Department and was updated in 1995.
- The Facility Representative Program was implemented at Fernald with initial qualification in October 1995.

At the end of 1995, the Department has completed all of the Recommendation 93-4 Implementation Plan deliverables. As originally anticipated, this Implementation Plan has required more than one year to implement primarily due to operational challenges encountered during the restart of the Uranyl Nitrate Hexahydrate Stabilization Project at Fernald.

Recommendation 93-3, Improving Technical Capability in Defense Nuclear Programs

Recommendation 93-3 addresses the technical capability of the Department's personnel who are associated with defense nuclear facilities. The Board's concerns included the Department's difficulty in attracting, developing, and retaining personnel who are adequately qualified by technical education and experience to provide the level and quality of management, direction, and guidance that are essential to the Department's safe operation of its defense nuclear facilities.

The Department is confronted by limitations and often reductions in the number of personnel authorized within the organization. This can be compounded by the difficulty in attracting and retaining highly competent personnel with the background, experience, and training appropriate for the Department's present and future requirements. Staffing for tomorrow's needs is not solely achieved by simply fine-tuning today's work force, but rather requires extensive, dedicated efforts in what can be extensive transition processes.

The Assistant Secretary for Defense Programs and the Assistant Secretary for Human Resources and Administration conducted a comprehensive, program-wide evaluation of staffing within Defense Programs. The evaluation produced a staffing profile for Defense Programs Headquarters, Operations Offices, and Area/Site Offices to address current and future staffing requirements.

The Department received legislative authority under the Defense Authorization Act of 1995 for Excepted Service Appointment Authority to recruit and retain qualified personnel to meet the Department's most pressing personnel needs. The Department hired twenty personnel during 1995 under the Excepted Service Appointment Authority, and an additional eighteen personnel were in the recruitment process at the end of 1995.

In accordance with the 93-3 Implementation Plan, the Department has standardized its approach to training and qualification of the Department's technical personnel. The Technical Qualification Program includes a General Technical Base Qualification Standard, twenty-three Department-wide Functional Area Qualification Standards, and additional Office/Facility-Specific Qualification Standards. The Department-wide Standards were completed during 1995. Implementation of the Program was achieved in 1995 such that each level of departmental management is familiar with the Program; the employees required to be part of the Technical Qualification Program have been specifically determined; and, those employees have been measured against the appropriate Technical Qualification Standards to determine where additional training is required. Approximately 2,500 technical personnel have been identified to participate in the Program.

Departmental Order 360.1, "Training," was approved in May 1995. Order 360.1 requires incumbents to complete required training within three years (i.e., by May 1998). This Order institutionalizes a Technical Qualification Program for technical personnel, including requirements for evaluating employees against Technical Qualification Standards and documenting the approval of exemptions and equivalencies to specified competencies. Additionally, Individual Development Plans are to be developed for each technical employee. The nuclear safety rule 10CFR830.330, "Personnel Selection, Qualification, Training and Staffing Requirements at Department of Energy Reactor and Nonreactor Nuclear Facilities," has been prepared and is being reviewed for finalization in 1996. This rule defines requirements for contractor training and qualification at nuclear facilities. In accordance with its Implementation Plan, the Department is also implementing Training Implementation Matrices per departmental Order 5480.20A, "Personnel Selection, Qualification, and Training Requirements for Department of Energy Facilities."

As previously reported, completion of this Implementation Plan requires more than one year; the actions itemized in the Implementation Plan apply across all technical elements of the Department and involve significant programmatic and cultural changes. The completion of actions associated with the Technical Qualification Program for incumbents is currently projected by June 1998.

Recommendation 93-2, The Need for Critical Experiment Capability

Recommendation 93-2 recommended the Department retain its program of general purpose criticality experiments and direct the program toward the objectives of improving the information base underlying prediction of criticality and serving the educational needs of the community of criticality engineers. The Board emphasized the importance of maintaining a base of information in criticality control covering the physical situations that would be encountered in handling and storing fissile material in the future. This Recommendation also emphasized the need to maintain a community of individuals who are experienced and competent in practicing criticality control.

Established in December 1993, the Nuclear Criticality Experiments Steering Committee sets priorities and develops scope and funding requirements for criticality experiments, analytical codes, nuclear criticality data base development and maintenance, experimental bench marking of the codes and hands-on criticality training. The Committee process established by the Department in

implementing this Recommendation has not only succeeded in addressing key issues relative to this important capability, but also has matured significantly. Initially, the Department focused on maintaining the capability to conduct critical experiments and hands-on training. During 1995, the Department began viewing criticality predictive capability from a programmatic perspective. This view fully recognizes the contribution of each program element (experiments, training, benchmarking, analytical codes, and nuclear data) to the improvement of criticality predictability. It also recognizes that application of improved criticality predictability not only enhances criticality safety, but could potentially lead to significant cost savings in the handling and storage of nuclear materials. Some specific 1995 accomplishments are identified below:

- Eight experiments from the Committee's priority experiments list are currently in the planning phase, in process of being conducted, or having the results analyzed.
- Eight criticality training courses were conducted at Los Alamos.
- Priority enhancements to the Department's analytical codes and criticality benchmark data have been identified and are in progress.

Development of an equitable funding strategy that enhances the Department's capability to make continuous improvements in criticality predictability and training is the major issue that remains to be addressed. Funding for criticality experiments and training program elements has been stabilized at an appropriate level to maintain reasonable capability in those areas. Stabilization of funding at appropriate levels for the other three program elements must also be accomplished. Such institutionalization of a Nuclear Criticality Predictability Program within the Department with defined program element and funding responsibilities is the final step before closure of Recommendation 93-2.

As previously reported, this Implementation Plan has required more than one year to implement due to the challenge of getting the program fully budgeted and institutionalized. The Department anticipates completion of the planned activities by September 1996.

Recommendation 93-1, Standards Utilization in Defense Nuclear Facilities

Recommendation 93-1 focuses on ensuring that the level of safety assurance at those facilities that assemble, disassemble and test nuclear explosives (weapons) is at least as rigorous as that required at other defense nuclear facilities. The Department's Implementation Plan calls for identification and modification of Department orders and directives that should be strengthened in relation to facilities that assemble, disassemble and test nuclear explosives. In accordance with the Recommendation 93-1 Implementation Plan, which also included a Board independent initiative, the Nuclear Explosive Safety Study Corrective Action Plan, the following departmental order revisions, implementation guide, and standards were prepared and delivered to the Board for review and comment in July 1995:

Order Revision 5610.10A, "Nuclear Explosive and Weapon Surety Program"

Order Revision 5610.11A, "Safety of Nuclear Explosive Operations"

G-5610.11, "Implementation Guide for Use with DOE Order 5610.11A Safety of Nuclear Explosive Operations"

DOE-STD-XXXX-95, "Preparation Guide for the U.S. Department of Energy Hazard Analysis Reports for Nuclear Explosive Operations"

DOE-STD-YYYY-95, "Nuclear Explosive Safety Study Process"

DOE-STD-ZZZZ-95, "Personnel Assurance Program."

As previously reported, this Recommendation 93-1 Implementation Plan has required more than one year to implement due to the multi-site nature of the planned actions. The formal departmental concurrence process remains for the above order revisions, implementation guide, and standards. The Department anticipates resolution of all comments developed in the concurrence process and publication of the order revisions, the implementation guide and the standards by September 1996. The only other remaining open action item is related to order compliance at the Pantex Plant; this item is being reviewed for possible incorporation into another Implementation Plan.

Recommendation 92-4, Multi-Function Waste Tank Facility at Hanford

Recommendation 92-4 concerns the Hanford Multi-Function Waste Tank Facility design and other new defense nuclear facilities. The Multi-Function Waste Tank Facility, as an element of the Hanford Tank Waste Remediation System Program, was intended to provide treatment and disposal of Hanford Site tank waste. The Board stressed the importance that the design engineering for the Facility incorporate systems engineering principles and approaches, detailed engineering criteria, and related practices that were essential to adequate protection of public health and safety. The Board recommended establishing an effective project management organization and adopting a systems engineering approach for the project to ensure its design meets the Department's safety goals.

The Department's Implementation Plan focuses on the use of an integrated systems approach in defining, controlling, and executing the overall Hanford mission. The Department has initiated a site-wide systems engineering approach to define and achieve the overall objectives of the Hanford site. The Department also has streamlined the Hanford management structure and process to improve its efficiency and provide a clear line of responsibility and accountability. In initiating the systems engineering effort, the approach selected was to define the technical baseline for the entire Hanford site through a site-wide, top-down systems analysis to identify, define, and integrate the site programs and projects. This analysis would identify site-level cleanup system deliverables which, when assigned to programs including the Tank Waste Remediation System, would define the boundaries, interfaces, and requirements for the site programs. Systems Engineering Management Plans and implementing procedures are being developed for site, program, and project requirements to provide the mechanism for monitoring and reporting performance against the requirements throughout the individual activity life cycles.

In 1995, the Department performed assessments that concluded that the Multi-Function Waste

Tank Facility and the Aging Waste Transfer Line Projects should be cancelled. The associated Implementation Plan actions and deliverables are no longer necessary. With the deletion of these actions from the Implementation Plan, the remainder of the planned actions emphasize systems engineering.

As previously reported, this Implementation Plan requires more than one year to implement due to the magnitude of applying systems engineering principles throughout the Hanford activities. The estimated completion date of Implementation Plan activities is September 1997.

Recommendation 92-2, Facility Representatives

Recommendation 92-2 expresses the Board's concerns about the Department's selection, training, and assignment of its Facility Representatives. The Facility Representatives play a key role in establishing the Department's presence and setting high performance expectations for the management and operating contractor. They also play a key role by involving the Department's senior management at Headquarters and the Operations Offices in aggressively pursuing resolution of conduct of operations issues. The Facility Representatives spend the majority of their time observing operations and assessing operating conditions in their assigned facilities.

The Department's activities in completing the Action Plan continued through 1995. Significant accomplishments include:

- Complex-wide staffing of the Facility Representatives program increased in 1995. Approximately 93 percent of the Facility Representative positions were filled at the end of 1995. The selection and qualification processes for Facility Representatives emphasize conduct of operations knowledge and practical experience.
- Field organizations have developed site-specific qualification standards for Facility Representatives. Field organizations have evaluated incumbent Facility Representatives against the qualification standards, documented the results of the evaluations, and established training plans for the incumbent Facility Representatives.
- Facility Representative training program activities are implemented as continuing actions of the Technical Program Coordinating Committee. This Committee is coordinating training resources to support functional area qualification standards for Facility Representatives as part of the Department's program to improving technical capability.

The final deliverable of this Implementation Plan is a written report on the status of the program, its future plans, and methods to institutionalize periodic status reports by the Facility Representatives. A Task Force, led by the Office of Field Management, has been assembled and is currently assessing these matters. A final report of this assessment, anticipated to be complete by March 1996, should demonstrate successful completion of the Department's Implementation Plan for this Recommendation. As originally anticipated, the Department's Implementation Plan has required more than one year to complete due to the complex-wide management issues involved, including program development and selection and training of the large number of Facility Representatives necessary.

Recommendation 91-6, Radiation Protection

The Recommendation concerns radiation protection policy and practices throughout the Department's defense nuclear facilities complex. The programmatic aspects identified in the Department's 91-6 Implementation Plan have been successfully completed. The Department has

achieved, and the Board has acknowledged, significant improvement in radiological protection quality throughout the defense nuclear complex. However, specific radiological issues remain within the complex.

Since December 1991, the Department has undertaken a number of new measures to improve occupational radiation protection as highlighted below.

- The Department issued a radiological control policy in June 1993. The Department published, and to a large extent has implemented, measures to improve radiological performance as delineated in the Department's Radiological Control Manual. This Manual formed the basis for site-specific radiological control manuals at the Department's sites.
- The Occurrence Reporting and Processing System was developed to provide important data related to radiological protection and has been improved. Successful ongoing programs use data from this system for trending and promulgating "lessons learned." The Department's Occurrence Reporting and Processing System Task Force, consisting of Headquarters, Operations, and contractor personnel, issued its final report in August 1995.
- The Department has developed and implemented standardized core training for radiological workers and radiological control technicians. This is supplemented by additional job-specific and site-specific training. Full implementation of Standardized Core Training Courses was completed in December 1995, with a few exceptions. Defense nuclear facilities have implemented, or have committed to implement in the near future, a Post Training Evaluation and Retention Testing Program.
- The Department's Infrastructure Evaluation Team has conducted an independent, external evaluation of Headquarters, Operations, and contractor radiation protection infrastructure and resources at defense nuclear facilities. The Department's Management Action Plan in response to the Infrastructure Evaluation Team's report is under final development and has been briefed to the Board.
- The Department has updated and codified its basic radiation protection standards in 10CFR835, "Occupational Radiation Protection." The provisions in this rule incorporate recent recommendations from authoritative scientific bodies and are consistent with the standards promulgated by other Federal agencies and current industry practices.
- The Department has approved its contractors' documented radiation protection programs that establish the plans and measures to ensure compliance with 10CFR835 by January 1996. The Department has also established an oversight structure for providing independent monitoring of compliance with 10CFR835.

10CFR835 establishes adequate basic protection standards and includes as-low-as-reasonably-achievable provisions. It encompasses the principles established in the Radiological Control Manual. This regulatory approach, with penalties for violations, ensures adequate worker radiological protection and is compatible with the Department's evolving necessary and sufficient requirements identification process. As a result, the Radiological Control Manual is being redesignated as a nonmandatory, guidance document.

As previously reported, this Implementation Plan has required more than one year to implement due to the cross-functional, multi-site nature of the planned activities, including achieving meaningful culture changes. Based upon changes and improvements in the Department's radiation protection program over the last several years, the Department has been reviewing the

commitments made in the 91-6 Implementation Plan and is reaching the conclusion that many of these commitments should be considered complete, while others more appropriately could be consolidated into other open Board Recommendations or tracked through other avenues. The Department anticipates completion or disposition of all planned activities and deliverables by June 1996.

Recommendation 90-7, Hanford Waste Tanks

The Recommendation concerns ferrocyanide in the single-shell tanks used to store high-level waste at Hanford. The Recommendation calls for installing temperature sensors to monitor tanks containing ferrocyanide, performing gas cover sampling and analyses, accelerating the characterization program, and developing emergency plans for tank degradation or failure. As previously reported, completion of the Department's Implementation Plan has required more than one year due to the technical complexities of characterizing and analyzing the Hanford waste tanks.

The Department has completed the activities to resolve the safety issues identified in Recommendation 90-7 as follows:

- Enhanced temperature measurement - Installation of thermocouple trees in the ferrocyanide bearing tanks was completed in 1995.
- Continuous temperature monitoring - The thermocouple trees in the ferrocyanide bearing tanks have been connected to a centrally monitored and automatically recorded data management system for continuous monitoring.
- Cover gas monitoring - Headspace sampling of the ferrocyanide bearing tanks was completed in 1995. The sampling results confirmed earlier modeling studies that had concluded the flammable gas concentrations from ferrocyanide reactions in the tanks are too low to be of concern and that continued monitoring is not necessary.
- Ferrocyanide waste characterization - Modeling and simulation studies have shown that the high alkalinity and high radiation environment of the ferrocyanide bearing tanks lead to decomposition of the ferrocyanide compound. This has been confirmed through analyses of core and auger samples from ten of the eighteen ferrocyanide bearing tanks. The ten tanks sampled include tanks in which bounding conditions of relatively low alkalinity and low levels of radiation would be expected to result in relatively low decomposition rates for the ferrocyanide. Additional samples are not required to resolve the safety issue.
- Chemical reaction studies - Final reports of the studies were issued in September 1995 comparing chemical and physical parameters of ferrocyanide waste simulants with actual tank waste samples and integrating the Ferrocyanide Safety Program hydrolysis and radiolysis aging studies.
- Emergency response planning - Actions with respect to emergency response planning were completed prior to 1995. The emergency response system is exercised periodically to maintain and test the response capability.

The aging experiments and tank samples demonstrate that the effect of waste aging has degraded the ferrocyanide contained in the tanks and support the conclusion that the tanks no longer pose an explosive safety hazard. To validate the worst case aging conditions determined from the studies, four ferrocyanide tanks have been sampled to obtain confirmatory samples. These samples are being analyzed as part of the ongoing characterization activities in accordance with the

Department's Implementation Plan for related Recommendation 93-5, Hanford Waste Tanks Characterization Studies. Based on the above actions and studies and the fact that the Department has sampled and analyzed ten of the eighteen ferrocyanide tanks, the Department considers that the original safety issues have been addressed and the necessary Department actions of this Implementation Plan are complete. The Department expects to recommend closure of this Recommendation in early 1996.

D. Report on Implementation Plans Requiring More Than One Year

42 U.S.C. § 2286d(f)(1) states that, if complete implementation of a Department Implementation Plan takes more than one year, the Secretary must report this to Congress and set forth the reasons for the duration and when implementation is expected to be completed. In accordance, the following active Implementation Plans are expected to require a total of more than one year to complete.

90-7, Hanford Waste Tanks*

91-6, Radiation Protection*

92-2, Facility Representatives*

92-4, Multi-Function Waste Tank Facility at Hanford*

93-1, Standards Utilization in Defense Nuclear Facilities*

93-2, The Need for Critical Experiments Capability*

93-3, Improving Technical Capability in Defense Nuclear Programs*

93-4, Environmental Restoration Management Contracts*

93-5, Hanford Waste Tanks Characterization Studies*

93-6, Maintaining Access to Nuclear Weapons Expertise*

94-1, Improved Schedule for Remediation

94-2, Safety Standards for Low-Level Waste

94-4, Deficiencies in Criticality Safety at Oak Ridge, Y-12

95-1, Improved Safety of Cylinders Containing Depleted Uranium

* - Previously reported to require more than one year to implement.

The associated reasons and expected completion schedules were provided with the previous discussion of Department activities for each Recommendation.

IV. BOARD INTERFACE INITIATIVES

The Department shares with the Board the common goal of ensuring adequate protection at its defense nuclear facilities of public and worker health and safety and the environment. To accomplish this goal, the Department's policy is to:

- Fully cooperate with the Board.
- Thoroughly consider the Recommendations and other safety information provided by the Board.
- Consistently meet its commitments to the Board.
- Conduct its interactions with the Board in accordance with the highest professional standards.

The Secretary has delegated to the Under Secretary of Energy the responsibility for ensuring that Board issues are properly addressed within the Department. The Office of the Departmental Representative to the Defense Nuclear Facilities Safety Board, reporting to the Under Secretary, manages the Department's overall interface with the Board and provides advice and direction for resolving identified safety issues.

Meetings, Site Visits, and other Defense Nuclear Facilities Safety Board Interactions The Department has continued to interact extensively with the Board and its staff, and feels it has become more effective and thorough in these interfaces. Department personnel supported over 200 formal meetings and site visits by the Board or its staff in 1995. This has included provision of logistical and technical support and interface, as appropriate, to facilitate unrestricted access by the Board and staff to the Department's facilities. Appendix A provides a summary of site visits supported by the Department during 1995.

In 1995, the Department and the Board exchanged over 180 items of correspondence. A large portion of the communications between the Board and the Department involves the Board's Recommendations and the deliverables for the Department's Implementation Plans. In addition, the Department receives and responds to trip reports detailing visits by the Board or its staff to the Department's facilities, and specific requests from the Board or staff for particular information or action by the Department. Appendix B provides a summary of key correspondence for 1995.

Secretary of Energy Quarterly Discussions with the Board

The Secretary initiated quarterly discussions in 1994 between the Board members and senior Department management. These discussions continued in each quarter of 1995. The Department typically is represented in these quarterly discussions by the Secretary, Under Secretary, Assistant Secretaries, and the Departmental Representative. This forum facilitates senior level discussions of key safety and management issues and agreement on relative priorities and directions.

Principal Deputy Assistant Secretary Meetings

Individual Board-related matters or topics typically may affect more than one of the Department's sites, programs, or offices. The Principal Deputy Assistant Secretaries are designated as the central point of contact for all Board-related matters within Defense Programs, Environmental Management, and Environment, Safety and Health with further coordination provided by the Office of the Departmental Representative. Scheduled meetings involve the appropriate Deputy Assistant Secretaries, the Office of the Departmental Representative, and other Department personnel, as appropriate. These meetings are focused to achieve a consistent understanding and response to individual topics, priorities, schedules, and

to address and respond to potential problems that may arise within each Principal Deputy Assistant Secretary's area of responsibility.

These meetings are designed to provide an avenue for flow of information up and down the Department's organization in response to Board-related matters. They provide an additional link between the Secretary's quarterly discussions with the Board and the remainder of the Department.

Department Commitment Consolidation Initiative

This year the Department has evaluated existing Department commitments to identify those with common goals, activities, or resources and to consolidate them. This process involves consolidation of similar or overlapping commitments, identification of commitments that may have been overtaken by subsequent events, identification of commitments that do not measurably contribute to safety, and preparation of the basis for near-term closures. Closure of Recommendations and consolidation of remaining commitments enable both the Department and the Board to focus on safety improvements and thus utilize resources more effectively.

The Department has interfaced very successfully with the Board and its staff on this initiative. This initiative has been jointly promoted by both the Department and the Board. As a result of this initiative, the Department and the Board agreed to close five Board Recommendations in October 1995. Further, significant review and evaluation was accomplished on the Department's Recommendation 91-6 Implementation Plan on Radiation Protection. The Task Group has continued to work with the Board's Staff through December 1995 to negotiate closure of additional Recommendations. For example, Recommendations 92-2, Facility Representatives, and 93-4, Environmental Restoration Management Contracts, are potential candidates for closure in early 1996.

Guidelines for the Department's Interface with the Board

Guidelines for the Department's interface with the Board were promulgated by the Under Secretary in June 1994 to provide consistent, effective, and predictable interactions with the Board. The guidelines provide direction across site and organizational boundaries of the Department.

Revision 2 to the guidelines was issued in 1995. This revision incorporated additional lessons learned into the guidelines to improve the timeliness, responsiveness, and effectiveness of the Department's interface with the Board. Key revisions included a Format and Content Guide for Implementation Plans, improved process description and flow charts for the Recommendation Response and Implementation Plan Development processes, and integration of the Safety Issues Management System into the Guidelines.

Department Interface Workshop

The Office of the Departmental Representative to the Defense Nuclear Facilities Safety Board hosted an Interface Workshop in September 1995. The workshop was attended by approximately 100 Department and management and operating contractor personnel. Objectives for the workshop included an exchange of information and sharing of experiences among the participants in effectively interfacing with the Board.

Sixteen Operations Offices, Field Offices, Area Offices, and laboratories were represented in the workshop. Each of the Department's major Headquarters Offices involved in Board activities were also represented.

Periodic Headquarters/Field Video Conference

Periodic joint video conferences are scheduled by the Office of the Departmental Representative to include Headquarters and Field representatives such as the Operations Offices, Site Offices and Area

Offices. These video conferences provide a forum for the participants to remain current on Department safety initiatives and Board-related safety issues. Video conference topics typically are solicited in advance from the participants to provide the opportunity for specific issues of significance to them to be brought before the other participants.

Safety Issues Management System

The Office of the Departmental Representative reviews the Department's Implementation Plans and other outgoing correspondence to the Board. Commitment information is identified from these documents and entered into the Safety Issues Management System database. Distribution of monthly reports on the status of commitment implementation or completion includes responsible Department managers, points of contact, and Secretarial Officers.

Monthly report information is sorted by Recommendation, site, organization, and overdue and near-term status. In addition, remote users have the on-line capability to view and sort the database of Board Recommendations, Department responses, and Implementation Plan commitments and actions.

Information Database of Defense Nuclear Facilities Safety Board-Related Documents

The Office of the Departmental Representative has prepared and maintains an information database of documents to support the Department's interaction with the Board. Documents relevant to the Board's activities are maintained in the database. The Office of the Departmental Representative maintains and controls the official information database, including any additions or deletions. An updated information database is distributed quarterly on diskette.

The database may be searched for words or phrases specified by the user's query. The user may copy and print source documents from the database. Sections of a document may be highlighted within the user's database, and personal notes may be documented within the margin of the user's database, as desired. Other than highlighting sections, or attaching personal notes, the user cannot edit the index or the content of the database.

V. CONCLUSIONS

The Department has made significant progress on health and safety issues during 1995. In 1995, the Department reduced the number of open Board Recommendations from 21 to 17. Six Board Recommendations were closed as a result of Department activities while only two new Board Recommendations were received. For example, the Department's Operational Readiness Review program, the subject of a Board Recommendation closed in 1995, is now considered an important strength of the Department's safety program. The Department submitted six new Implementation Plans in 1995 in response to Board Recommendations the Department accepted in 1994 and 1995. The Department also established a number of broad-based initiatives to increase health and safety assurance. Key Department initiatives include the Strategic Alignment, Directives Reform, Contract Reform, the Department Standards Program, Integrated Safety Management of Research and Development Activities, and the Advisory Committee on External Regulation.

In 1996, the Department intends to keep focus on assuring existing Implementation Plans remain valid and workable, managing Implementation Plan actions to completion by the identified Plan due dates, and pushing for closure of Implementation Plans when the underlying safety issues are resolved. A significant challenge for the Department in 1996 is to prepare a workable Implementation Plan in response to Board Recommendation 95-2, Safety Management. The Department's acceptance of key elements of this Recommendation reflects the recognition of the need to further institutionalize the process of incorporating environment, safety and health considerations into the planning and execution of activities. The Department's Implementation Plan team is focused on developing an integrated safety management process that incorporates ongoing safety management programs and initiatives, and provides adequate assurance, flexibility, and cost-effectiveness. The Department anticipates working closely with the Board to understand their issues and concerns and thereby to develop a workable safety management process.

Appendix A
Site Visits Supported by the Department in 1995

Fernald

- Review CRU-4 vitrification, February 16-17, 1995.
- CRU-4 Vitrification, Low Level Waste and Thorium Overpack, May 17-18, 1995.
- Uranyl Nitrate Hexahydrate Stabilization Project, Operational Readiness Review, June 5-9, 1995.

Hanford

- Systems engineering, criticality design, tank waste Remediation system, and the implementation of Recommendation 92-4, February 6-9, 1995.
- TeleVideo conference, Hanford environmental restoration program issues, February 21, 1995.
- K Basins, configuration management and Instrument & Controls systems, February 28-March 2, 1995.
- Recommendation 93-5 Technical Basis and Pretreatment review, March 13-16, 1995.
- Procedures review for Recommendation 92-4, March 20-23, 1995.
- Decontamination and Safety Review of Site Surplus Facilities; Deactivation and Decommissioning, April 24-28, 1995.
- Facility Status, Safety Basis and Systems; Operations and Training, May 15-18, 1995.
- Tank Farm Training and Qualification, Tank Waste Remediation System Requirements Review, Site-Wide Systems Engineering, and Implementation Plan 92-4, May 22-24, 1995.
- Recommendation 93-3, K-Basin and Miscellaneous Underground Storage Tanks, June 5-7, 1995.
- Board visit, June 6-7, 1995.
- Expected Life Analysis of SY101 Mixer Pump, June 13-15, 1995.
- Emergency Exercise "Oz," June 19-23, 1995.
- Recommendation 92-4, Existing Cross Site Transfer Line Operational Readiness, and C-106 Retrieval Project Critical Design Reviews, June 27-29, 1995.
- Review of Tank Waste Characterization (Implementation of Recommendation 93-5) and Tank Farms Corrosion Programs, July 17-20, 1995.
- Spent Nuclear Fuel (K-Basins), July 24-27, 1995.
- DOE-RL Technical Management Plan & Implementation of Recommendation 93-4, August 1-3, 1995.
- K-Basin, Aug 21-23, 1995.

- Board and members of the Board staff traveled to Hanford to discuss Recommendation 93-5 (Tanks Characterization Studies); technical procedure adequacy; training, qualifications, and conduct of operations at B Plant; Standards/Requirements Identification Documents; Facility Representatives program; and K-Basin fuel storage, August 21-24, 1995.
- Plutonium Finishing Plant Vertical Calciner, September 18-20, 1995.
- Reactor Facilities Decommissioning, October 3-5, 1995.
- Design Basis of Canister Storage Building., October 18-19, 1995.
- Radiation Protection October 30-November 2, 1995.
- Tank Farm Safety and As Low As Reasonably Achievable Program, November 6-8, 1995.
- Board and members of the Board staff traveled to Hanford to review K-Basin/ Canister Storage Building, DOE-RL Facility Representative at K-Basin, Deactivation/Decommissioning (B-Plant, PUREX), Recommendation 93-5 Implementation status, Tank Farm Criticality Control, Procedure Improvement and progress, Recommendation 93-4 (Technical Management Plan), November 7-8, 1995.
- Tank C-106 Safety Review, November 13-16, 1995.
- Tank Farm Authorization Basis, Characterization and Pretreatment, December 5-6, 1995.

Idaho National Engineering Laboratory

- Review the Pit 9 Remediation Project, environmental restoration, and waste experimental reduction facility operation, February 7-9, 1995.
- Review spent nuclear fuel storage, February 14-16, 1995.
- Idaho Chemical Processing Plant fuel transfers process and conduct of operations review, March 28-30, 1995.
- Spent fuel status review, April 10-12, 1995.
- Advanced Test Reactor SAR Review, May 2-4, 1995.
- Radiological Controls and Practices at the Idaho Chemical Processing Plant Tank Farms, June 27-29, 1995.
- Electrical, Instrumentation and Control, and Fire Protection Systems review, August 8-10, 1995.
- New Waste Calcine Facility, High Level Waste Processing and Safety Analyses, August 29-31, 1995.
- Annual Emergency Response Exercise and Spent Fuel Review, September 11-15, 1995.
- Seismic Hazard Studies, October 9-12, 1995.

Mound Site

- Review the Unload Readiness Assessment process, March 13-16, 1995.

- Tritium Review, July 17-20, 1995.
- Special Unload Readiness Assessment, September 13-15, 1995.

National Weapon Laboratories

- Board visit to Albuquerque and Los Alamos National Laboratory, January 9-12, 1995.
- Lawrence Livermore National Laboratory, Review maintenance practices, February 7-9, 1995.
- Sandia National Laboratory, Review automated canot process, February 14, 1995.
- Los Alamos National Laboratory, Review plutonium storage, and research and development safety issues, February 14-16, 1995.
- Los Alamos National Laboratory, Qualification Evaluation Process, March 14-15, 1995.
- Los Alamos National Laboratory, Reservoir Surveillance Meeting, March 16-20, 1995.
- Sandia National Laboratory, Plutonium Vulnerability, March 20-23, 1995.
- Los Alamos National Laboratory, Supplemental Directives 5610.10 and 5610.11, April 4-5, 1995.
- Lawrence Livermore National Laboratory, Electrical, instrumentation and control, and fire protection review, April 3-6, 1995.
- Sandia National Laboratory, Emergency Exercise "Rubble Glow," May 15-18, 1995.
- Los Alamos National Laboratory, Plutonium Safety Review, May 17-18, 1995.
- Board visit to Albuquerque for discussions on Managing the Safety of Research and Development and on Recommendation 93-6 archiving activities at the Laboratories, May 24-25, 1995.
- Lawrence Livermore National Laboratory, Resumption Progress, June 6-8, 1995.
- Los Alamos National Laboratory, Surveillance of Operational Safety Requirements, TA-55, Chemical and Metallurgy Research, and Weapons Engineering Treatment Facility, June 13-15, 1995.
- Board visit to Lawrence Livermore National Laboratory, June 21-23, 1995.
- Sandia National Laboratory, Integrated Standards Based Management System, July 10-12, 1995.
- Los Alamos National Laboratory, Research and Development Safety, July 10-13, 1995.
- Board visit to Sandia National Laboratory and Los Alamos National Laboratory, July 12, 1995.
- Lawrence Livermore National Laboratory, Observe the Plutonium Facility, July 24-27, 1995.
- Los Alamos National Laboratory, Safety Analysis Reports and Operations at the Los Alamos Critical Experiments Facility, July 25-27, 1995.
- Los Alamos National Laboratory, Weapons Surveillance and Aging Effects, August 8-10, 1995.
- Lawrence Livermore National Laboratory, Readiness Assessment, August 29-31, 1995.

- Lawrence Livermore National Laboratory, Plutonium Standards Development Meeting, September 11-14, 1995.
- Los Alamos National Laboratory, Appaloosa and DAHRT review, September 18-21, 1995.
- Lawrence Livermore National Laboratory, for High Explosives Surveillance Review, November 7-8, 1995.
- Lawrence Livermore National Laboratory, Integrated Safety Management Plan, November 14-16, 1995.
- Board visit to Lawrence Livermore for review with the Department and its contractors of the status of public health and safety issues pertaining to safety in defense nuclear research and development activities at the Lawrence Livermore National Laboratory, December 5-7, 1995.

Nevada Test Site

- Review Security Master Study Nuclear Explosive Safety for Device Assembly Facility, January 17-20, 1995.
- Review facility status, safety basis, safety systems, fire protection, and nuclear explosive safety study W48 storage, February 7-9, 1995.
- Exercise KISMET, February 21-23, 1995.
- Exercise KISMET, February 28-March 2, 1995.
- Device Assembly Facility security and Nuclear Explosive Safety Studies, July 26-27, 1995.
- Environmental Protection Programs & Device Assembly Facility Waste Management August 1-3, 1995.
- Emergency Exercise KUCHEN, August 1-3, 1995.
- Emergency Exercise KUCHEN execution, August 7-8, 1995.
- Exercise JIGSAW, November 30, 1995.
- Board visit, November 27-28, 1995.
- Nuclear Explosive Safety Study for the Coded Optical Device Ennoblement System, December 12-14, 1995.

Oak Ridge

- TeleVideo conference, environmental restoration program issues, February 21, 1995.
- Facilities and Inventories Overview, March 13-17, 1995.
- Recommendation 94-4 implementation status, April 10-13, 1995.
- Y-12 Restart Preparations, May 30-June 2, 1995.
- Resumption Progress, June 7-8, 1995.

- Special Material Handling Operations, June 23, 1995.
- Observe Special Operations at Y-12, June 27-30, 1995.
- Ventilation Systems Review, July 10-14, 1995.
- Observe Special Operations, July 18-21, 1995.
- Observe Special Operations, July 25-28, 1995.
- Y-12 readiness, August 14-17, 1995.
- Readiness Assessment, August 28-September 1, 1995.
- Board visit on Readiness Assessments, September 6, 1995.
- Readiness Assessment, September 7-8, 1995.
- Criticality Program Review, October 16-18, 1995.
- Highly Enriched Uranium Processing, October 25-27, 1995.
- Task 4 of Recommendation 94-4, Conduct of Operations Assessment, October 31-November 3, 1995.
- Board member visit, December 11-13, 1995.
- K25 Operational Readiness Review, December 11-12, 1995.

Pantex Plant

- Pit storage, February 28-March 2, 1995.
- Review safety issues and tritium reservoir handling, March 28-31, 1995.
- Reviews of Buildings 12-104A and 12-116, April 10-13, 1995.
- Training and Qualifications and Conduct of Operations Review from April 18-21, 1995.
- Reviews of B61 QED, April 24-27, 1995.
- Reviews of B61 Nuclear Explosive Safety Studies, May 23-25, 1995.
- Order Compliance Review, May 30-June 2, 1995.
- SAR review, August 28-30, 1995.
- Reviews of B61-7 SES, November 28-30, 1995.

Rocky Flats

- Transuranic waste review, January 9-13, 1995.

- Unresolved safety question, February 6-9, 1995.
- Follow-up review of Building 371, February 7-9, 1995.
- Pit storage and surveillance testing, February 21-22, 1995.
- Emergency Exercise "Ready 95," March 27-31, 1995.
- Environment, Safety, and Health Review Results, April 11-13, 1995.
- Conduct of Operations and Facility Representative Program, April 17-21, 1995.
- Implementation Plan 94-3 review April 25-27, 1995.
- Plutonium Residues Status, May 2-4, 1995.
- Plutonium Safety Review, May 15-16, 1995.
- Hydrogen Generation & Ventilation Review, May 23-25, 1995.
- Exercise "Ready 95," May 31-June 1, 1995.
- Exercise "Ready 95," June 7-8, 1995.
- Review of B-771 Structural Integrity Concerns, Recommendation 94-3 Status Update and Unreviewed Safety Question Determinations, June 21-22, 1995.
- Residue Stabilization, July 18-19, 1995.
- Board visit to review Bldg. 776 and the Implementation Plan for 94-3 Structural Results, July 24-26, 1995.
- Board Staff Review to include Bldg. 776 and Implementation Plan 94-3 Structural Results, July 27-28, 1995.
- Phase I of Building 771 Operational Readiness Review, August 7-10, 1995.
- Ventilation Review, August 14-17, 1995.
- Plutonium Stabilization, August 22-24, 1995.
- Board visit to review stabilization schedules/Rec. 94-1 (Accelerated Remediation Schedule); performance measures for Kaiser-Hill; structural integrity issues; facility use tradeoffs for Buildings 707 and 779 for material stabilization; and the status of Rec. 94-3 (Seismic Safety -Building 371) September 26, 1995.
- Progress on Recommendation 94-3, November 1-3, 1995.
- Geological Faulting at Los Alamos National Laboratory (Rocky Flats meeting site due to personnel availability), November 1, 1995.
- Authorization Basis, December 6-7, 1995.
- Safety Systems and Components, December 12-14, 1995.

Savannah River Site

- QA and review operational readiness of the Westinghouse Savannah River Company In-Tank Precipitation System, January 10, 1995.
- Separations safety envelope review, February 8-9, 1995.
- Review Defense Waste Processing Facility configuration management, maintenance and ventilation, February 13-16, 1995.
- Rec. 94-1 plutonium storage issues and plutonium vulnerabilities, February 27-March 2, 1995.
- Discuss Tritium Topics, March 13-14, 1995.
- Review Defense Waste Processing Facility and In-Tank Precipitation Conduct of Operation, March 20-23, 1995.
- Plutonium Storage/Vulnerability, April 10-12, 1995.
- In-Tank Precipitation, Safety Envelope, April 24-26, 1995.
- F Canyon Phase II and FB Line Safety, April 27-28, 1995.
- Defense Waste Processing Facility's Assured Confinement, May 3-4, 1995.
- Operational Readiness Review at In-Tank Precipitator, May 17-19, 1995.
- In-Tank Precipitation, Operational Readiness Review, May 22-25, 1995.
- In-Tank Precipitation, Radiation Protection, Waste Management Review and Tritium Storage and Handling Review, June 6-8, 1995.
- Spent Fuel Review, Am-Cm Solidification, Actinide Packaging Facility, Glass Waste Storage Facility, Tritium Reservoir Training, Rad Worker Requalification and Respirator Training, and Plutonium Reprocessing, June 19-21, 1995.
- FB-Line Evaluated Cold Runs and Review of Restart Preparations, July 10-13, 1995.
- Review the In-Tank Precipitation Facility Waste Management and Environmental Programs, August 2-3, 1995.
- Safety Review, August 14-17, 1995.
- Training, Qualifications and Conduct of Operations at the Defense Waste Processing Facility, August 21-24, 1995.
- FB-Line Validation Runs, September 25-29, 1995.
- Structural Reviews of the Defense Waste Processing Facility, Electrical, Instrumentation & Controls, and Fire Protection, September 27-29, 1995.
- Defense Waste Processing Facility review, October 4-6, 1995.
- Safety Analysis at the Defense Waste Processing Facility, October 25-26, 1995.

- In-Tank Precipitation, Benzene Issue Resolution, November 8-9, 1995.
- Defense Waste Processing Facility, Westinghouse Savannah River Operational Readiness Review, November 14-16, 1995.
- FB-Line Restart Evaluation, F-Canyon Phase II Restart Preparation and Emergency Preparedness, November 13-17, 1995.
- Board member visit November 15-17, 1995.
- Safety Related Equipment and Components, November 28-December 1, 1995.
- Operational Readiness Review at the Defense Waste Processing Facility and Radioactive Operations, December 11-15, 1995.

Waste Isolation Pilot Plant

- Transuranic Program Review, July 17-19, 1995.

Appendix B

Key Department/Board Correspondence in 1995

From the Board to the Department:

- On January 31, 1995, the Board forwarded to the Departmental Representative a staff report entitled "Qualification Evaluation Process."
- On February 3, 1995, the Board provided to the Assistant Secretary for Defense Programs an observation report on 1994 Nuclear Explosive Safety Studies and Nuclear Explosive Risk Assessments.
- On February 3, 1995, the Board forwarded to the Under Secretary a letter noting major deficiencies with the proposed revision of Order 4700.1.
- On February 17, 1995, the Board forwarded to the Secretary its Fifth Annual Report to Congress.
- On February 22, 1995, the Board provided to the Secretary its comments on the "Alternative Futures for the Department of Energy National Laboratories" Report.
- On February 23, 1995, the Board forwarded a letter to the Secretary concerning the Implementation Plan for Recommendation 93-5.
- On March 28, 1995, the Board forwarded a letter accepting the Department's Implementation Plan 94-4.
- On March 28, 1995, the Board forwarded a letter to the Assistant Secretary for Environmental Management confirming the Board's concurrence that the Board's issues raised in the review of the Department's "Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs Draft Environmental Impact Statement" (DOE/EIS-0203-D) were adequately resolved.
- On April 5, 1995, the Board forwarded a letter to the Secretary addressing the Implementation Plan for Recommendation 93-6. The Board is concerned with late commitments. In particular, they are concerned with the overdue program to identify and capture skills and knowledge of individuals who have been engaged for many years in the assembly, disassembly and testing of nuclear weapons. Secondly, they were concerned that efforts to remove administrative obstacles to gain needed access to retirees was stalled.
- On April 14, 1995, the Board forwarded a letter to the Assistant Secretary of Defense Programs addressing the Board's concerns over four recent documents that originated from the office's of Defense Programs. The Board's concerns were that the documents could negatively impact the Department's execution of the Implementation Plan 93-1, "Standards Utilization in Defense Nuclear Facilities." The documents concern development of Orders and standards at nuclear explosive facilities and assessment of compliance with Orders and standards at Department defense nuclear facilities.
- On April 17, 1995, the Board transmitted a letter to the Assistant Secretary for Environmental Management addressing deficiencies at Rocky Flats in the conduct of Emergency Preparedness during exercise "Ready 94". The Board has requested, within 90 days, the Department's plans to address the deficiencies in the exercise and corrective action for the shortcomings in Emergency Preparedness identified by the Department over the past three years.
- On April 18, 1995, the Board transmitted a letter to the Associate Deputy Secretary for Field Management addressing Recommendation 92-2. The letter addresses the Board's concerns over the lack of progress in initiating Facility Representative programs at some Department facilities and improving

weak programs at other facilities. The Board is also concerned over the lack of progress in establishing a continuing career progression program for Facility Representatives. The Board has asked for a brief regarding measures planned for sites that have not demonstrated progress toward implementing the Facility Representative qualification program.

- On April 24, 1995, the Board transmitted a letter to the Secretary addressing radiation protection programs and the cost estimates of sites to achieve compliance with the Department's Orders and rule. The Board requests that the Department provide a report within 60 days that addresses the following:
 1. For fiscal years 1993 through 1996, identify the costs already incurred, and those projected for the future, to meet radiological safety requirements contained in Order 5480.11, 10 CFR Part 835, and other radiological protection standards which the Department deems necessary to ensure adequate protection of public health and safety at defense nuclear facilities.
 2. Provide the documentation which served as the basis for the cost estimates and state the reasons for the higher costs at the sites listed in the letter which required more than \$10 million to achieve compliance.
 3. Provide cost details for the fiscal years 1993 through 1996 in the following categories related to radiological controls: equipment, capital construction, administrative, overhead, personnel, auditing, oversight, training development and implementation.
- On April 28, 1995, the Board transmitted a letter to the Assistant Secretary for Defense Programs addressing efforts to improve the Nuclear Explosive Safety Study process. The Board forwarded a report of the staff's visit to the Nevada Operations Office where Nuclear Explosive Safety Studies evaluated the interim storage of W-48 weapons in bunkers within Area 27 of the Nevada Test Site. The Board also expressed concerns with the late arrival of the Nuclear Explosive Safety Studies Input Document and its lack of thoroughness. They also questioned its value as a measure of readiness from the nuclear explosive safety perspective to safely conduct the operation observed by the staff.
- On April 28, 1995, the Board transmitted a letter to the Secretary addressing effective means to manage the safety of research and development activities while maintaining the flexibility needed to conduct Research and Development in support of national security objectives. The Board has requested within 90 days a report from the Department addressing three issues:
 1. The adequacy of the guidance given by the Department to the field to ensure that the integrated safety management systems under development at the Department's defense nuclear laboratories will contain and implement an appropriate set of safety requirements and adequate management structures that incorporate and are consistent with the intent of Standards/Requirements Identification Documents commitments.
 2. A description of how the Department plans to address the need for adequate technical talent, mechanisms and acceptance criteria to review and expeditiously approve tailored integrated safety management systems at these laboratories, including appropriate disposition of proposed technically-justified equivalencies and exemptions.
 3. A summary of actions needed to coordinate Department line management and independent oversight safety audits at the weapons laboratories.
- On May 5, 1995, the Board forwarded a letter to the Secretary conditionally accepting Implementation Plan 94-1, Improved Schedule for Remediation. The three conditions were:
 1. The implementation of Recommendation 94-1 should be directed by a dedicated project organization.

2. The Department will remain committed to bringing all plutonium metal and oxide into conformance with the 50-year storage standard by May 2002.
 3. The Department will aggressively move to acquire all necessary resources, perform all needed research and development to meet the projected milestone, and fulfill all legal requirements. The urgency motivating Recommendation 94-1 implies that the Department is expected to avail itself of the flexibility provided by the National Environmental Protection Act and other relevant statutes, in the event more expeditious action is necessary or appropriate, to meet the schedules in the Board's Recommendation and the Implementation Plan.
- On May 5, 1995, the Board forwarded Recommendation 95-1 to the Secretary. The Recommendation deals with "Improved Safety of Cylinders Containing Depleted Uranium". In summary, the Recommendation addresses problems associated with 50,000 cylinders of UF₆ in outdoor storage at the three gaseous diffusion plants. The Board contends that poor maintenance and storage conditions, combined with mechanical damage suffered during handling, have led to corrosion and subsequent breaching of several of these carbon steel cylinders. The Board recommends: "To protect against the dispersal of large amounts of uranium to soil and ground water in years to come, an early start to remedial action should be planned and then instituted. The alternatives could be a massive problem with extraordinary financial costs.
 1. An early program be started to renew the protective coating of cylinders containing the tails from the historic production of enriched uranium.
 2. The possibility of additional measures be explored, to protect these cylinders from the damaging effects of exposure to the elements, as well as any additional handling that may be called for.
 3. A study be instituted to determine whether a more suitable chemical form should be selected for long-term storage of the depleted uranium."
 - On May 5, 1995, the Board transmitted a letter to the Assistant Secretary for Defense Programs concerning a report identifying the formal process(es) the Los Alamos National Laboratory is following to identify and mitigate hazards in the design, construction, and preparation for operation of new and upgraded defense nuclear facilities. In particular, the Board's letter provided two trip reports on visits to the Chemistry and Metallurgy Research building upgrades project and the TA-55 Plutonium Facility. Their comments concerned the need for emergency standby power and strengthening of configuration management activities.
 - On June 13, 1995, the Board transmitted a letter to the Assistant Secretary for Environment, Safety and Health which provided a review of DOE-STD-1023-94, "Natural Phenomena Hazards Assessment Criteria."
 - On June 14, 1995, the Board transmitted a letter to the Assistant Secretary for Defense Programs addressing activities at Lawrence Livermore National Laboratory's Plutonium Facility (Building 332). The letter discusses a recent staff review that determined that various building safety systems were not being monitored as required. In particular, it was observed that there existed a lack of assurance that the Plutonium Facility was complying with the Limiting Conditions for Operations specified in the approved Technical Safety Requirements. In addition, surveillance requirements established to ensure operability of such safety systems as emergency power, fire protection and ventilation had not been met. The Board requested the Department's plan for addressing the issues that led to the Technical Safety Requirement violations.
 - On June 15, 1995, the Board forwarded a letter to the Secretary conditionally accepting Implementation

Plan 94-2, Conformance to Safety Standards at Low-Level Nuclear Waste and Disposal Sites. The three conditions were:

1. The Department approval of performance assessments needs to be based on the entire Low-Level Waste inventory located on a site such that the offsite consequences of the collection of these sources can be established.
 2. The plan to perform a preliminary analysis as a precursor to the final performance assessment is acceptable to conserve resources. However, this effort should be accomplished as a continuum rather than as separate sequential studies.
 3. A quarterly report be submitted to the Board.
- On June 15, 1995, the Board forwarded a letter to the Secretary addressing the recently completed two-year review of the design, construction, maintenance, and operation of ventilation systems in the Department's plutonium processing facilities. The Board requested that the Department provide a report within 180 days addressing the following:
 - a report that evaluates the design, construction, operation and maintenance of ventilation safety systems at the Department's plutonium processing and handling facilities in terms of applicable Department and consensus standards; and
 - subsequent to the above review, a plan that details any corrective actions deemed necessary by the Department and the results of USQ review where this is found to be appropriate.
 - On June 30, 1995, the Board forwarded a letter to the Assistant Secretary for Environment, Safety and Health expressing concerns over statements to the Subcommittee on Energy and Water Development of the House Committee on Appropriations, House of Representatives on March 8, 1995.
 - On July 24, 1995, the Board forwarded a letter to the Assistant Secretary for Defense Programs indicating that they had received and accepted the revised guidance for the conduct of readiness reviews for nuclear testing, termed "Testing Readiness Assessments." The guidance was developed in response to the Board's Recommendation 92-6, Operational Readiness Reviews, and was revised to address the Board's letter of December 9, 1994. The Department has committed to use the interim Testing Readiness Assessment process until additional guidance to be developed under Recommendation 93-1 is available.
 - On July 24, 1995, the Board forwarded a letter to the Under Secretary addressing the Board's concerns with the status of fulfilling commitments under the 91-6 Implementation Plan. The Board requested that the Department provide a) revised due dates, b) the problems that caused the delays, c) corrective actions, and d) the single Department official who has overall authority and responsibility for the Implementation Plan.
 - On July 25, 1995, the Board forwarded a letter to the Assistant Secretary for Defense Programs addressing issues with the implementation of Recommendation 93-1, Standards Utilization in Defense Nuclear Facilities. The Board had previously sent a letter on the same subject on April 14, 1995. In particular, the Board accepted a one-month delay in the Department providing the final Orders, guides, and standards, as they apply to Order 5610.10, "Nuclear Explosive and Weapon Surety Program" and Order 5610.11, "Safety of Nuclear Explosive Operations". Several concerns with the draft orders were also addressed.
 - On July 31, 1995, the Board forwarded a letter to the Assistant Secretary for Human Resources and Administration which provided the Board staff's comments on the Department Implementation Plan SAI-44, "Corporate Approach to Training in the Department of Energy," dated June 16, 1995. The Board requested a briefing on the SAI-44 Implementation Plan due to its potential impact on the implementation

of Board Recommendation 93-3 and the observation that "Implementation of Technical training related to [Board] recommendations is inconsistent and unclear."

- On August 1, 1995, the Board forwarded a letter to the Assistant Secretary for Environment, Safety and Health which responded to the Assistant Secretary's letter of July 21, 1995 concerning statements to the Subcommittee on Energy and Water Development of the House Committee on Appropriations, House of Representatives on March 8, 1995.
- On August 2, 1995, the Board forwarded a letter to the Secretary which responded to the Secretary's letter of July 11, 1995 concerning Recommendation 93-5. The Board accepted the stated intent to delete two commitments from the Implementation Plan. The letter also acknowledged that the Department will be forwarding a revised Implementation Plan for review later in 1995.
- On August 3, 1995, the Board forwarded a letter to the Assistant Secretary for Environmental Management concerning the structural integrity of Buildings 771 and 776/777 at the Rocky Flats Environmental Technology Site. Due to the potential hazards in the buildings and the apparent lack of Department or contractor identification of the hazards, the Board has requested, within 60 days, a report from the Department to address the root causes and corrective action to prevent recurrence.
- On August 7, 1995, the Board forwarded a letter to the Assistant Secretary for Environmental Management concerning the In-Tank Precipitation Facility's high level waste tanks at the Savannah River Site. The Board expressed concern over the potential seismic activity accident scenario which could result in significant off-site consequences. Due to the potential consequences of a spill and the Board's determination that the draft document, "Spill Contingency Plan for H-Area Tank Farm," dated June 28, 1995, did not adequately address accidents, the Board has requested that the Department within 60 days, provide a report to address four potential accident issues.
- On August 11, 1995, the Board's Technical Director forwarded a letter to the Director of the Office of Engineering, Operations, Security, and Transition Support concerning Board staff comments on the draft standard, "Criteria for Safe Storage of Plutonium-Bearing Materials (excluding Metals and Oxides Containing Greater than 50 Weight Percent Plutonium)."
- On August 23, 1995, the Board forwarded a letter to the Secretary concerning the changing mission at Rocky Flats. The Board concluded that the consolidation of nuclear materials, as discussed in Recommendation 94-1, may cause the hazards workers face during decommissioning of aging nuclear facilities to exceed those encountered during operation of those nuclear facilities. The Board concluded that their oversight activities would be increased by assigning two technical staff personnel to serve as the Board's Site Representatives at Rocky Flats. As such, two Board staff personnel will arrive on site by October 2, 1995.
- On September 11, 1995, the Board forwarded a letter to the Assistant Secretary for Defense Programs concerning a recent visit to Los Alamos National Laboratory to review surveillance of Operational Safety Requirements. The Board staff noted significant improvement in the surveillance of TA-55, improved surveillance procedures, better evolution control, improved review of record data, and greater formality of operations. Observations of the Chemistry and Metallurgy Research building, on the other hand, indicated that surveillance procedures and their implementation lacked the needed formality.
- On September 12, 1995, the Board forwarded a letter to the Secretary concerning the Implementation Plan for Recommendation 94-5, Integration of Department of Energy Safety Rules, Orders and Other Requirements. The Board, in their letter, noted that the Implementation Plan detailed several key documents that are still under development. As a result of the non-availability of the documents, the Board has deferred determination of the adequacy of the Implementation Plan until those documents are available for review. The first of the six referenced documents is committed to be available by September 15, 1995 and the last by October 30, 1995.

- On October 3, 1995, the Board forwarded a letter to the Secretary accepting the Implementation Plan for Recommendation 94-3, Rocky Flats Seismic and System Safety. The Board offered one comment on the Implementation Plan: "Although the initial schedule provided in the implementation plan was overly optimistic, DOE-Rocky Flats has recently developed a revised schedule that provides additional time to complete the Phase I efforts. The implementation plan should be revised to reflect this schedule."
- On October 4, 1995, the Board forwarded a letter to the Assistant Secretary for Environmental Management concerning the Implementation Plan for Recommendation 93-4, Environmental Restoration Management Contracts. The Board expressed concerns that the Technical Management Plan concept had not been integrated into the activities of the 1993 Contract Reform Team nor the Process Improvement Team tasked with revising the DOE Order 4700.1. Order 4700.1 has been subsumed into the new order on Life Cycle Asset Management. The Board requested that the Department provide within 90 days:
 1. A revision to the 93-4 Implementation Plan, including deliverables and milestone dates, that includes the method by which the Technical Management Plan concept will be incorporated into future Department contracts.
 2. A reconciliation of departmental efforts to define Department responsibilities via the generic Technical Management Plan, the Environmental Management Safety and Health Integrated Plan, the Functions and Responsibilities Manual and the Defense Programs Operations Manual. This effort is to provide a basis for the development of a Department-wide standards-based safety management plan--a plan that is not inconsistent with the Technical Management Plan and may include the Technical Management Plan.
- On October 6, 1995, the Board forwarded a letter to the Assistant Secretary for Environmental Management expressing its continuing interest in the status of emergency preparedness throughout the complex and provided a copy of the Board staff report on Exercise "Ready 94" at the Rocky Flats Environmental Technology Site. The Board requested to be notified in writing within 90 days of the actions the Department planned for addressing specific negative items identified in the report and shortcomings in emergency preparedness identified by the Department's own evaluation over the past three years. In addition, the Board requested within ten days, the reasons for the delay in responding to its April 17, 1995 letter concerning the same subject, exercise "Ready 94."
- On October 11, 1995, the Board forwarded Recommendation 95-2, Safety Management, to the Secretary. Recommendation 95-2 addresses the use of standards by contractors at Department facilities and the level of conduct of operations to be maintained at these facilities. It acknowledges that three previously promulgated Recommendations (90-2, 92-5, and 94-5) intersect in many of their implications.
- On October 13, 1995, the Board forwarded to the Assistant Secretary for Environmental Management comments from a staff review of the draft site evaluation survey for low-level waste management. The comments provide the Board's "cradle to grave" approach that will parallel that required by the Resource Conservation and Recovery Act for other waste management areas, i.e., disposal of hazardous waste. The comments were provided by the Board to assist the Department in developing the scope and content of the vulnerability assessment portion of Recommendation 94-2.
- On October 13, 1995, the Board forwarded to the Assistant Secretary for Environmental Management a letter which referenced an earlier Board letter of August 7, 1995. This series of letters relates to spill contingency plans for the High Level Waste Tank Farms at Savannah River. The Board expressed concerns that the August 7, 1995 letter deficiencies had not been completely addressed in an October 6, 1995 letter from the Assistant Manager of High-Level Waste, at DOE- Savannah River Site. The Board's August 7, 1995 letter required an answer within 60 days which the Board estimated to be sufficient time to complete the entire task. The Board's October 13, 1995 letter indicated an additional "30 to 45 days should be more than ample time to complete the reporting requirements."

- On October 24, 1995, the Board forwarded to the Secretary, a letter which closed five Recommendations. The closing of the five Recommendations was the result of a joint effort between the Board and Department staffs to develop a closure and consolidation of commitments of fully implemented or outdated Board Recommendations. The Board closed:
 1. Recommendation 90-5 (Systematic Evaluation Program for Rocky Flats), "Changes in mission at the Rocky Flats Environmental Technology Site and other actions resulted in the recommendation being overtaken by events."
 2. Recommendation 90-6 (Plutonium in the Ducts at Rocky Flats), "This Recommendation has become outdated."
 3. Recommendation 92-6 (Requirements and Guidance for Operational Readiness Reviews), "Issuance of revised DOE Order on Operational Readiness Reviews closes this recommendation."
 4. Recommendation 92-5 (Conduct of Operations at Defense Nuclear Facilities), "This Recommendation would be superseded by Recommendation 95-2."
 5. Recommendation 90-2 (DOE's Nuclear Safety Standards Program), "DOE is currently revising its schedule for development and implementation of Standards/Requirements Identification Document (S/RID). The revised schedule will then be consolidated with Recommendation 94-5. Recommendation 95-2 provides additional information which would apply to Recommendation 90-2 closure."
- On November 1, 1995, the Board forwarded a letter to the Secretary accepting the Implementation Plan for Recommendation 95-1, Improved Safety of Cylinders Containing Depleted Uranium. The Board viewed favorably the current activities underway to resolve the issues addressed in the Recommendation.
- On November 2, 1995, the Board forwarded a letter to the Deputy Secretary concerning Department safety orders and safety rules. The Board expressed concerns that they had not received a promised tracing of the existing safety requirements contained in the 52 Orders of interest to the Board and their concomitant revised Orders, rules and other requirements (the cross walk). In addition, the Board indicated that they had not received all of the guidance documents and standards that are necessary to evaluate the set of the Department's safety requirements and guidance as a whole.
- On November 9, 1995, the Board forwarded a letter to the Assistant Secretary for Environmental Management forwarding DNFSB/TECH-7, "Stabilization of Deteriorating Mark 16 and Mark 22 Aluminum-Alloy Spent Nuclear Fuel at the Savannah River Site." This report, prepared by a Board staff team, examines the dry storage and chemical processing alternatives for stabilizing the Mark 16 and Mark 22 spent fuel. This report is in reference to Recommendation 94-1.
- On November 15, 1995, the Board forwarded a letter to the Secretary concerning Recommendation 94-1, Improved Schedule for Remediation. This letter addressed the Board's concerns with the Department's future plans for F-Canyon and H-Canyon chemical process facilities that would be used to process fuel elements. The Board asserts that the Department needs to maintain the capability for chemical processing of spent nuclear fuel since this is the only proven safe way by which radioactive material can be converted into a form suitable for ultimate geologic disposal. This means that the capability now existing at Savannah River continues to be essential.
- On November 15, 1995, the Board forwarded a letter to the Secretary concerning Recommendation 94-1, "Improved Schedule for Remediation." The letter addressed the Board's concerns with Mark 16 and Mark 22 fuel elements stored in basins at the reactors and processing canyons at Savannah River Site. The Board believes that deferring the decision to chemically treat the Mark 16/22 fuel and similar material

while dry storage is investigated is inappropriate. The Board considers the logical and safe approach to follow is to chemically treat the materials and convert them into components whose safe management is currently available.

- On November 21, 1995, the Board forwarded a second letter (also on November 2, 1995) to the Deputy Secretary concerning the revision of the Department safety orders, rules, and standards. Numerous safety documents have been issued for use without prior review by the Board or its staff. The Board reiterated that they are responsible for reviewing those documents prior to issuance. The Board provided copies of previous Department commitments over the past five years which indicated that the Department would provide the revised safety documents for Board review prior to their issuance.
- On December 5, 1995, the Board forwarded to the Secretary a letter addressing concerns with the Department's commitments in the Implementation Plan for Recommendation 94-5, Integration of Department Safety Rules, Orders and Other Requirements. The Department committed to providing the Board with a revised Functions and Responsibilities Manual by February 1, 1996. The manual, by which the Department defines the safety roles and responsibilities of Department organizational elements, has "long been out-of-date." The Board lacks confidence that the FAR Manual will be updated as scheduled. The Board requests that the Department provide within 10 days: 1) a status report, 2) the name of the responsible Department manager, and 3) interim milestones.
- On December 5, 1995, the Board forwarded to the Assistant Secretaries for Environmental Management and Environment, Safety and Health a letter which referenced Hanford Site Tank Farms operations. The Board raised issues with line management processes used to review and approve changes in established safety limits.
- On December 5, 1995, the Board forwarded to the Secretary a letter which referenced the Secretary's letter of December 4, 1995 requesting a 45-day extension to respond to the Board Recommendation 95-2, Safety Management; the Board granted the extension from December 4, 1995.
- On December 15, 1995, the Board forwarded to the Assistant Secretary for Environmental Management a letter which discussed a review of the design criteria for the Spent Nuclear Fuel Project's Canister Storage Building at Hanford. The Board reiterated its view that design criteria issues be resolved early in the design process.
- On December 18, 1995, the Board forwarded to the Assistant Secretary for Environmental Management a letter which discussed deficiencies observed in a site visit to Savannah River for an emergency preparedness annual exercise. The Board requested that the Department provide justification that the Central Training Facility has the ability to respond to postulated accidents originating from nearby hazardous facilities. A report was requested within 75 days.
- On December 22, 1995, the Board forwarded to the Secretary a letter which designated specific Board members and staff members to represent the Board in discussions about the comparability of the Necessary and Sufficient concept with the concept set forth in Recommendation 95-2, Safety Management.

Trip Reports:

- On January 9, 1995, the Board provided to the Assistant Secretary of Environmental Management a trip report concerning In-Tank-Precipitation issues at Savannah River Site.
- On February 22, 1995, the Board provided the Departmental Representative the following trip reports:

<u><i>Date of Report</i></u>	<u><i>Site</i></u>	<u><i>Subject</i></u>
11/1/94	Pantex	Radiation Protection Review
10/12/94	INEL	Basins
9/29/94	Fernald	Uranium/Thorium Interim Storage Safety Review
9/14/94	Hanford	Supplementary Report on Emergency Exercise Fraser
8/24/94	LLNL	Pu Storage
8/16/94	NTS	Radiation Protection Program
11/23/93	Hanford/INEL/SRS	Spent Fuel Storage Basins
10/18/93	Fernald	Uranyl Nitrate Hexahydrate Stabilization Project, K-65 Projects; Training, Technical Safety Requirements, Safety Analysis Reports
6/3/93	SRS	Spent Fuel Storage
11/14/92	Hanford	Assessment of Tank 101-SY
9/18/92	Fernald	Uranyl Nitrate Hexahydrate Stabilization Project
9/15/92	Hanford	Operational Readiness Reviews
7/9/92	Hanford	Evaporator 242A Review, Pu Finishing Plant and Uranium Oxide Plant Schedule Review

- On March 28, 1995, the Board forwarded to the Assistant Secretary of Environmental Management a trip report on the Conduct of Operations at the Idaho Chemical Processing Plant High Level Waste Tank Farm Upgrade Project at the Idaho National Engineering Laboratory.
- On March 28, 1995, the Board provided the Departmental Representative the following trip reports:

<u><i>Date of Report</i></u>	<u><i>Site</i></u>	<u><i>Subject</i></u>
2/17/95	Oak Ridge	Recommendation 94-4
11/23/93	Multiple Sites	Spent Fuel Storage Bins at Multiple Sites
12/1/94	Multiple Sites	Nuclear Explosives Safety Study and Nuclear Explosive Risk Assessment at Multiple Sites

- On March 28, 1995, the Board provided the Departmental Representative the following trip reports:

<u><i>Date of Report</i></u>	<u><i>Site</i></u>	<u><i>Subject</i></u>
12/1/94	Pantex/LLNL/NTS	Nuclear Explosives Safety Study and Nuclear Explosives Risk Assessment
11/23/94	Hanford/INEL/SRS	Spent Fuel Storage Basins
9/30/94	SRS	M-Area Unirradiated Fuel Facility
11/29/94	SRS	Waste Management Review
12/12/94	SRS	In-Tank Precipitator Review of Emergency Ventilation
12/14/94	SRS	In-Tank Precipitator Facility Review

- On April 10, 1995, the Board provided the Departmental Representative the following trip reports:

<u><i>Date of Report</i></u>	<u><i>Site</i></u>	<u><i>Subject</i></u>
10/4/94	Hanford	System Engineering Activities
11/28/94	Hanford	System Engineering Review
4/4/95	SRS	Radiation Protection Case Study of D&D at Old HB Line
5/3/94	SRS	Review of Preparations for D&D/SED
5/4/94	SRS	Replacement Tritium Facility, Conduct of Operations
6/6/94	SRS	F-Canyon and FB-line Order Compliance
9/27/94	SRS	Startup Preparations at In-Tank Precipitator
12/7/94	SRS	F-Canyon and FB-line Safety Envelopes

- On April 12, 1995, the Board provided the Departmental Representative the following trip report:

<u><i>Date of Report</i></u>	<u><i>Site</i></u>	<u><i>Subject</i></u>
4/12/95	SRS	F-Canyon safety envelope for Phase II

- On April 19, 1995, the Board provided the Departmental Representative the following trip reports:

<u><i>Date of Report</i></u>	<u><i>Site</i></u>	<u><i>Subject</i></u>
1/30/95	INEL	Backup Power Supply Systems
9/16/94	INEL	Tritium Testing and Safety Analyses, Advanced Test Reactor
1/9/95	Rocky Flats	Backup Power Supply Systems
12/29/94	Rocky Flats	Trenching at Rocky flats
1/17/95	SRS	In-Tank Precipitator Order Compliance Review
4/8/94	SRS	Old HB-Line
10/5/94	SRS	Defense Waste Processing Facility Environment Impact Statement
10/17/94	All	Department Implementation Guide for Sealed Radioactive Source Accountability and Control

- On May 15, 1995, the Board provided the Departmental Representative the following trip reports:

<u><i>Date of Report</i></u>	<u><i>Site</i></u>	<u><i>Subject</i></u>
11/23/94	Hanford	K-Basin Chute Barriers
3/10/95	INEL	Waste Management and Environmental Restoration
2/6/95	Rocky Flats	Radioactive Waste Management Review
12/27/94	Rocky Flats	Restart Activities
3/16/95	SRS	DOE Order 6430.1A Compliance Review of In-Tank Precipitator
3/6/95	SRS	In-Tank Precipitator Operational Readiness Review Process & QA
2/4/95	SRS	In-Tank Precipitator and Defense Waste Processing Facility, Electrical, Instrumentation & Control Review
1/27/95	SRS	Recommendation 94-1, Americium/Curium Processing

1/23/95 SRS Spent Fuel Storage

- On June 14, 1995, the Board transmitted a letter to the Assistant Secretary for Environmental Management enclosing the following trip report:

<u>Date of Report</u>	<u>Site</u>	<u>Subject</u>
5/10/95	SRS	In-Tank Precipitation Safety Envelope Review

- On June 22, 1995, the Board transmitted a letter to the Assistant Secretary for Defense Programs enclosing the following trip report:

<u>Date of Report</u>	<u>Site</u>	<u>Subject</u>
5/11/95	Pantex	Reviews of the Special Nuclear Material Component Staging Facility (Building 12-116) and the Weapon Special Purpose Replacement Complex (Building 12-A)

- On June 23, 1995, the Board transmitted a letter to the Assistant Secretary for Nuclear Energy enclosing the following trip report:

<u>Date of Report</u>	<u>Site</u>	<u>Subject</u>
5/23/95	ATR	Safety Analyses and Thermal Hydraulic Performance of the Advanced Test Reactor

- On July 5, 1995, the Board transmitted a letter to the Departmental Representative enclosing the following twenty trip reports:

<u>Date of Report</u>	<u>Site</u>	<u>Subject</u>
5/22/95	Hanford	Decommissioning
4/26/95	Hanford	High Level Waste Tank Safety and Characterization
4/24/95	Hanford	Recommendation 92-4 and Tank Farm Activities
4/20/95	Hanford	K-Basin Radiological Engineering Assessment
3/16/95	Hanford	Derivation and Implementation of Tank Farm Operational Safety Requirements
4/24/92	Hanford	Review of Radiological and Environmental Safety Programs
1/5/95	Mound	Special Unload Operations
10/6/94	Pantex	Review W-55 Issues
9/23/94	Pantex	Emergency Plan Exercise
8/23/94	Pantex	Order Compliance
6/30/94	Pantex	Ventilation Systems
1/7/94	Pantex	Rad Generating Devices
5/4/95	Rocky Flats	Facility Reps
3/27/95	Rocky Flats	Radiolytic Hydrogen Generation in Plutonium-Nitric Acid Solution Tanks
3/14/95	Rocky	Criticality Safety and Building 707 Thermal Stabilization Preparations

	Flats	
5/17/95	SRS	Training and Qualification at In-Tank Precipitator
2/23/95	SRS	Ventilation and Configuration Management at Defense Waste Processing Facility
2/17/95	SRS	Implementation of 90-2 & 92-2 at Defense Waste Processing Facility
6/3/92	SRS	K-Reactor Axial Power Monitors
1/12/94	Other	DOE Fifteenth Annual Low-Level Radioactive Waste Management Conference

- On July 11, 1995, the Board forwarded a letter to the Assistant Secretary for Environmental Management addressing a staff team review of the Savannah River Site on March 20-24, 1995. The review addressed the conduct of operations and engineering at the Defense Waste Processing Facility and In-Tank Precipitation Facility. An enclosed report provided a summary of observations made during the review.
- On July 21, 1995, the Board forwarded a letter to the Assistant Secretary for Environmental Management addressing a staff team review of Rocky Flats on May 22-25, 1995. The review concerned selected plutonium buildings and noted that maintenance in Building 371 has deteriorated to an unacceptable level. The Board requested that the Department respond to the deficiencies noted at Building 371 in the Department's response to the Board's June 15, 1995 letter on an "Overview of Ventilation Systems at Selected DOE Plutonium Processing and Handling Facilities."
- On July 26, 1995, the Board provided the Departmental Representative the following trip report:

<u>Date of Report</u>	<u>Site</u>	<u>Subject</u>
2/17/95	NTS	Device Assembly Facility Review

- On August 3, 1995, the Board forwarded to the Assistant Secretary for Environmental Management a trip report on the Hanford Site:

<u>Date of Report</u>	<u>Site</u>	<u>Subject</u>
6/22/95	Hanford	B Plant/Waste Encapsulation & Storage Facility Review

- On August 3, 1995, the Board forwarded to the Assistant Secretary for Environmental Management a trip report on the Savannah River Site:

<u>Date of Report</u>	<u>Site</u>	<u>Subject</u>
7/14/95	SRS	Spent Nuclear Fuel at SRS

- On August 23, 1995, the Board forwarded to the Assistant Secretary for Environmental Management a trip report on the Hanford Site:

<u>Date of Report</u>	<u>Site</u>	<u>Subject</u>
7/14/95	Hanford	Evaluation of Estimated Life of Mixer Pump for Tank 101-SY

- On September 5, 1995, the Board forwarded to the Assistant Secretary for Environmental Management a trip report on the Hanford Site:

<u>Date of Report</u>	<u>Site</u>	<u>Subject</u>
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8/15/95 Hanford Implementation Plan for Recommendation 93-4 Richland Operations Office
Technical Management Plan

- On September 8, 1995, the Board forwarded to the Assistant Secretary for Environmental Management a trip report on the Hanford Site:

<u>Date of Report</u>	<u>Site</u>	<u>Subject</u>
7/17/95	Hanford	Review of Procedures at the Hanford Site

- On October 3, 1995, the Board forwarded to the Assistant Secretary for Defense Programs a trip report concerning the Department's efforts to correct the deficiencies identified by the Nuclear Explosive Safety Study independent review team in its report of May 6, 1994. The trip report includes Board staff observations from three Nuclear Explosives Safety Study meetings and concludes that although significant progress in enhancing the Nuclear Explosives Safety Study process has occurred, more progress still needs to be made.
- On October 12, 1995, the Board forwarded to the Assistant Secretary for Environmental Management a trip report concerning a staff review visit on August 8 - 10, 1995 to the High Level Liquid Waste Evaporator and the New Waste Calcining Facility at the Idaho Chemical Processing Plant. The Board noted that although the Distributed Control System is relied upon for safe shutdown of the facility, it is not subjected to the level of rigor in the design review, testing and maintenance associated with such a system.
- On October 12, 1995, the Board forwarded to the Assistant Secretary for Environmental Management a trip report concerning a staff review visit to the Savannah River Site on August 21-25, 1995. The review included training, qualifications, and conduct of operations for the Defense Waste Processing Facility. Significant deficiencies were noted in all three areas.
- On October 13, 1995, the Board forwarded to the Assistant Secretary for Environmental Management a trip report concerning a staff review visit to the New Waste Calcining Facility at the Idaho Chemical Processing Plant on August 29-31, 1995. The Board noted that operator controls, including temperature monitoring and audio monitoring of kerosene ignition, are not proceduralized or raised to the level of Technical Specifications.
- On October 13, 1995, the Board forwarded to the Assistant Secretary for Environmental Management a trip report concerning a staff review visit on August 15, 1995 to resolve the safety bases of In-Tank Precipitation Facility wash cycle operations at Savannah River Site.
- On October 24, 1995, the Board provided the Departmental Representative the following trip reports:

<u>Date of Report</u>	<u>Site</u>	<u>Subject</u>
7/27/95	Fernald	Low Level Waste and OU-4 Vitrification Pilot Plant
8/8/95	Hanford	High Level Waste Tank Safety and Characterization
7/31/95	Hanford	Recommendation 92-4
7/25/95	INEL	Chemical Processing and Safety Basis
8/25/95	RF	Ventilation for Bldgs. 371, 776/777, 881, 883, and 886
7/31/95	Sandia	Emergency Response Exercise "Rubble Glow"
8/21/95	SRS	F-Canyon Safety Envelope and Americium/Curium Processing
6/2/95	SRS	F-Canyon and FB-Line Safety Envelopes

- On November 3, 1995, the Board forwarded a trip report to the Assistant Secretary for Defense Programs concerning a review of the Los Alamos Critical Experiment Facility operations and safety analysis documentation on July 25-27, 1995. An area of concern to the Board was the use of Technical Specification Requirements that predate the issuance of Order 5480.22 and are critical to the safe operation of the Los Alamos Critical Experiment Facility operation.
 - On November 6, 1995, the Board forwarded to the Assistant Secretary of Environmental Management a trip report, completed September 27-29, 1995, concerning electrical and structural design and construction of the Defense Waste Processing Facility at the Savannah River Site. The Board noted two issues which required resolution before startup. The issues concerned the sequencing of loads on the emergency diesel generator and the separation between the safety and non-safety electrical busses.
 - On December 20, 1995, the Board forwarded to the Assistant Secretary for Defense Programs a letter which discussed the Board staff's assessment of Y-12 progress in resuming operations in those facilities which support the Receipt, Storage and Shipment of the Special Nuclear Materials mission area. An attachment to the letter was a trip report dated November 3, 1995.
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From the Department to the Board:

- On January 9, 1995, the General Counsel forwarded to the Board a draft Policy Statement on Procedures for Developing, Implementing and Achieving Compliance with Nuclear Safety Requirements.
- On February 7, 1995, the Department transmitted a preliminary report to the Board addressing criticality safety at Rocky Flats.
- On February 10, 1995, the Department transmitted to the Board its tenth bimonthly progress report on Recommendation 92-6.
- On February 10, 1995, the Department transmitted to the Board a letter to inform them that the Stockpile Stewardship Report would be delayed from February 1, 1995 to March 1, 1995.
- On February 13, 1995, the Department transmitted to the Board a progress report providing information on Action 5 of the Implementation Plan for Recommendation 93-1.
- On February 13, 1995, the Department transmitted to the Board its quarterly status report for the first quarter of the Fiscal Year 1995 on Recommendation 93-2.
- On February 14, 1995, the Department transmitted a 45-day extension request to the Board for Recommendation 94-2.
- On February 16, 1995, the Assistant Secretary for Environment, Safety and Health provided to the Board staff names of Department officials responsible for the Implementation Plan for Recommendation 91-6.
- On February 16, 1995, the Assistant Secretary for Environment, Safety and Health provided the final report of the Infrastructure Evaluation Team.
- On February 21, 1995, the Department transmitted to the Board an acceptance letter for Recommendation 94-5.
- On February 22, 1995, the Assistant Secretary for Environmental Management responded to the Board concerning their May 11, 1994/December 13, 1994 letters, regarding the rate of meeting the commitments of Recommendation 93-5.

- On February 23, 1995, the Assistant Secretary for Defense Programs responded to the Board concerning their January 20, 1995 letter regarding the Department's Qualification Evaluation Process.
- On February 24, 1995, the Department transmitted to the Board its request for an additional 45 days to prepare its Implementation Plan for Recommendation 94-3.
- On February 24, 1995, the Department transmitted to the Board the Implementation Plan for Recommendation 94-4.
- On February 28, 1995, the Department transmitted to the Board the Implementation Plan for Recommendation 94-1.
- On March 6, 1995, the Assistant Secretary for Defense Programs transmitted a response to the Board's letter of November 25, 1994, concerning the Los Alamos National Laboratories.
- On March 6, 1995, the Deputy Assistant Secretary for Military Application and Stockpile Support transmitted to the Board the Implementation Plan for Recommendation 93-1 Action 4 Report/Nuclear Explosive Safety Study Corrective Action Plan.
- On March 27, 1995, the Deputy Assistant Secretary for Military Application and Stockpile Support forwarded to the Board the March 1995 deliverables scheduled in the Department's 94-4 Implementation Plan. These deliverables included: revised contractor criticality safety approval process documents; and contractor and Oak Ridge Operations Office implementing procedures for Department Order 5480.31, Startup and Restart of Nuclear Facilities.
- On April 12, 1995, the Assistant Secretary for Environmental Management transmitted a letter to the Board providing a process for implementing Recommendation 94-3, Rocky Flats Seismic and Systems Safety.
- On April 19, 1995, the Secretary submitted the annual written report to Congress, for calendar year 1994, concerning the Department's activities in response to Recommendations and other interactions with the Defense Nuclear Facilities Safety Board.
- On April 28, 1995, the Deputy Assistant Secretary for Military Application and Stockpile Support forwarded to the Board the April 1995 deliverables called for in the Department's 94-4 Implementation Plan. These deliverables included: the contractor's evaluation of the nuclear criticality safety program supporting the first resumption area and special operations to date; the Oak Ridge Operations Office corrective action plan developed from the corrective actions recommended in the Department's assessment report of October 13, 1994; and the Department's first quarterly status report for Recommendation 94-4.
- On May 5, 1995, the Assistant Secretary for Environmental Management transmitted the sixth quarterly status report for Recommendation 93-4 to the Board.
- On May 24, 1995, the Department transmitted to the Board its quarterly status report for the second quarter of Fiscal Year 1995 on Recommendation 93-2.
- On May 26, 1995, the Deputy Assistant Secretary for Research and Development forwarded to the Board a report assessing the role of Defense Programs line management in safety issues at Y-12. This report fulfilled a commitment of the Recommendation 94-4 Implementation Plan.
- On June 2, 1995, the Deputy Assistant Secretary for Military Application and Stockpile Support forwarded to the Board the May 1995 deliverables scheduled in the Department's 94-4 Implementation

Plan. These deliverables included: the contractor's corrective action plan for the deficiencies identified in the evaluation of the nuclear criticality safety program; and the contractor's assessment of the current conduct of operations posture.

- On June 5, 1995, the Secretary transmitted to the Board a 45-day extension request for the Recommendation 94-5 Implementation Plan.
- On June 5, 1995, the Assistant Secretary for Environmental Management transmitted a letter which notified the Board that there was a change in a milestone responding to Recommendation 90-7, Hanford Waste Tanks.
- On June 29, 1995, the Secretary transmitted a letter which informed the Board that funding information, requested in a Board letter of April 24, 1995, regarding radiological protection programs at defense nuclear facilities, would be delayed until July 21, 1995.
- On June 29, 1995, the Secretary transmitted to the Board the acceptance letter for Recommendation 95-1, Improved Safety of Cylinders Containing Depleted Uranium.
- On June 30, 1995, the Under Secretary transmitted to the Board the Annual Report deliverable for Recommendation 92-5, Discipline of Operations in a changing Defense Nuclear Facilities Complex.
- On June 30, 1995, the Secretary transmitted to the Board the Implementation Plan for Recommendation 94-3, Rocky Flats Seismic and Systems Safety.
- On June 30, 1995, the Deputy Assistant Secretary for Military Application and Stockpile Support forwarded to the Board the June 1995 deliverables called for in the Department's 94-4 Implementation Plan. These deliverables included: the Defense Programs line management corrective action plan for the deficiencies identified in the DP-13 assessment of the line management role in Y-12 safety issues; and the Training Assistance Team program to evaluate key Federal personnel, other than those in the Office of Environment, Safety and Health, involved with safety related activities at defense nuclear facilities at Y-12.
- On July 6, 1995, the Under Secretary transmitted to the Board a letter which responded to a Board letter of February 3, 1995, regarding Order 4700.1, Project Management System. The letter discusses future cancellation of Order 4700.1 and the promulgation of the Life Cycle Asset Management Directive.
- On July 7, 1995, the Secretary transmitted to the Board a letter which informed the Board of a forthcoming revised Implementation Plan for Recommendation 93-6, Maintaining Access to Nuclear Weapons Expertise in the Defense Nuclear Facilities Complex.
- On July 11, 1995, the Secretary transmitted to the Board a letter which informed the Board of the Department's decision to stop work on two of six commitments which were determined to be unnecessary in the Implementation Plan for Recommendation 93-5, Hanford Waste Tank Characterization Studies. The commitments addressed testing for ferrocyanide materials within core segments removed from waste tanks.
- On July 12, 1995, the Assistant Secretary for Environment, Safety and Health transmitted a letter to the Board which reported on the status of past Department oversight activities at the Y-12 Plant and other Oak Ridge Site facilities. The report addressed issues relevant to Recommendation 94-4, Deficiencies in Criticality Safety at Oak Ridge, Y-12.
- On July 21, 1995, the Assistant Secretary for Environment, Safety and Health sent a letter to the Board which responded to the Board's letter of June 30, 1995 concerning statements to the Subcommittee on Energy and Water Development of the House Committee on Appropriations, House of Representatives on

March 8, 1995.

- On July 21, 1995, the Secretary transmitted to the Board the Implementation Plan for Recommendation 94-5, Integration of Department Safety Rules, Orders and Other Requirements.
- On July 28, 1995, the Deputy Assistant Secretary for Military Application and Stockpile Support forwarded to the Board the July 1995 deliverables scheduled in the Department's 94-4 Implementation Plan. These deliverables included: the Department's criticality safety assessment program, incorporating commitments 2.1 and 3.4; the contractor's criteria for a self assessment of the criticality safety program; and the Department's second quarterly status report.
- On July 31, 1995, the Deputy Assistant Secretary for Military Application and Stockpile Support for Defense Programs transmitted deliverables to the Board required to fulfill commitments under the Action 4 Report for Recommendation 93-1.
- On August 24, 1995, the Deputy Assistant Secretary for Military Application and Stockpile Support for Defense Programs transmitted a letter to the Board notifying them of the status of resuming nuclear operations at Oak Ridge, Y-12.
- On August 31, 1995, the Deputy Assistant Secretary for Military Application and Stockpile Support forwarded to the Board the August 1995 deliverables called for in the Department's 94-4 Implementation Plan. These deliverables included: a contractor closure report for the deficiencies associated with the readiness for inspection of the Receipt, Storage and Shipment (RSS) mission area at Y-12; a contractor report outlining compensatory measures related to criticality safety program implementation at RSS; and a contractor report outlining use of mentors as a compensatory measures for conduct of operations program requirements. Deliverables satisfying commitment N.4.2 for the RSS mission area were also forwarded. They included: the contractor line management certification letter to commence their readiness assessment; the contractor's plan of action, implementation plan, readiness assessment report, and readiness to proceed memorandum with endorsements; and the Department's plan of action and implementation plan for the RSS readiness assessment.
- On September 15, 1995, the Principal Deputy Assistant Secretary for Defense Programs transmitted a letter to the Board forwarding a report "Managing the Safety of Defense Nuclear Research and Development Activities." This report responds to a Board letter of April 28, 1995 which raised issues concerning effective means of managing the safety of research and development while maintaining the flexibility needed to conduct Research and Development in support of national security objectives. The letter also commits the Department to briefing the Board within 60 days on progress made to establish integrated safety management systems.
- On September 15, 1995, the Deputy Assistant Secretary for Nuclear and Facility Safety sent a letter to the Board which forwarded the Department Standards Committee Action Matrix. The matrix outlines the action items approved by the Department Standards Committee to integrate and coordinate all standards-related activities. This also fulfills Commitment 2.2 of the Implementation Plan for Recommendation 94-5.
- On September 19, 1995, the Secretary sent a letter to the Board responding to the Board's April 24, 1995 letter concerning funding of radiological protection programs at defense nuclear facilities.
- On September 27, 1995, the Assistant Secretary for Environmental Management transmitted a letter to the Board which addressed criticality safety at Rocky Flats as it related to concerns raised in Recommendation 94-4.
- On September 28, 1995, the Assistant Secretary for Environmental Management forwarded a letter to the Board which included a Generic Technical Management Plan as a deliverable required by the

Implementation Plan for Recommendation 93-4, Environmental Restoration Management Contracts.

- On October 3, 1995, the Deputy Assistant Secretary for Military Application and Stockpile Support forwarded to the Board the September 1995 deliverables scheduled in the Department's 94-4 Implementation Plan. These deliverables included: a Defense Programs report documenting the continued participation of Defense Programs line management and support staff in the Y-12 resumption process; the Department's Training Assistance Team program for the evaluation of key contractor personnel involved with safety related activities at defense nuclear facilities at Y-12; and the Department's readiness assessment report for the Receipt, Storage and Shipment (RSS) mission area.
- On October 11, 1995, the Assistant Secretary for Environmental Management forwarded a letter to the Board which responded to the Board's letters of April 17, 1995 and October 6, 1995 concerning exercise "Ready 94" at the Rocky Flats Environmental Technology Site.
- On October 11, 1995, the Assistant Secretary for Environmental Management forwarded a letter to the Board which provided a progress report on the preliminary evaluations of seismic safety of Building 371 at Rocky Flats. This letter also forwarded a revised schedule which reflects a change in the completion date for Phase I in the Implementation Plan for Recommendation 94-3, Rocky Flats Seismic and System Safety.
- On October 16, 1995, the Secretary forwarded to the Board the Implementation Plan for Recommendation 95-1, Improved Safety of Cylinders Containing Depleted Uranium.
- On October 19, 1995, the Assistant Secretary for Defense Programs forwarded the Department's annual report of activities related to the implementation of Recommendation 93-2, Critical Facilities Infrastructure.
- On October 23, 1995, the Assistant Secretary for Environmental Management forwarded a letter which responded to the Board's letter of August 3, 1995. The letter addressed the failure of Department and contractor personnel at Rocky Flats to recognize the safety implications of known and apparent structural problems in Buildings 776/777 and 771.
- On November 1, 1995, the Assistant Secretary for Defense Programs forwarded the fourteenth and final bimonthly report on the implementation of Recommendation 92-6. The report covered the period of activities through September 30, 1995.
- On November 3, 1995, the Deputy Assistant Secretary for Military Application and Stockpile Support forwarded to the Board the October 1995 deliverables called for in the Department's 94-4 Implementation Plan. These deliverables included: the Department's conduct of operations assessment plan for separate evaluations of contractor conduct of operations implementation and the Department's conduct of operations oversight and support; the Training Assistance Team Report evaluating key Federal personnel, except EH personnel, involved with safety related activities at defense nuclear facilities at Y-12; the Department's third quarterly status report, containing an update of activities occurring between July 1 and September 30, 1995; and the completed items from commitment N.4.2 associated with the Depleted Uranium Operations (DUO) mission area. The specific DUO deliverables were: the contractor readiness to proceed memorandum with endorsements and the contractor readiness assessment report.
- On November 7, 1995, the Assistant Secretary for Environmental Management forwarded a letter to the Board concerning Recommendation 94-1. The letter informed the Board that the Department would be delayed by four weeks in completing the milestone of "Repackaging 256 items of plutonium metal in contact with plastic at Rocky Flats by October 31, 1995."
- On November 8, 1995, the Assistant Secretary for Environment, Safety and Health forwarded a letter to the Board concerning Recommendation 94-4, Deficiencies in Criticality Safety at Y-12. The letter

forwarded, as a deliverable, the Environment, Safety, and Health's Office of Oversight Training Team Assessment Plan and Report of Environment, Safety, and Health Residents at the Oak Ridge Site. This deliverable fulfilled commitments 5.1 and 5.2 of the Recommendation 94-4 Implementation Plan.

- On November 30, 1995, the Principle Deputy Assistant Secretary for Defense Programs transmitted to the Board the Recommendation 90-2 Quarterly Status Report for April 1, 1995 to June 30, 1995.
- On November 30, 1995, the Deputy Director of the Office of Nuclear Energy, Science and Technology forwarded a letter to the Board that enclosed the Systems Requirements Document. The Systems Requirements Document was the first deliverable identified in the Department's Implementation Plan for Recommendation 95-1, Improved Safety of Cylinders Containing Depleted Uranium.
- On November 30, 1995, the Deputy Secretary forwarded a letter to the Board which enclosed the Nuclear Materials Stabilization Task Group Quarterly Report (June 1 to August 31, 1995) on the implementation of Recommendation 94-1.
- On December 1, 1995, the Secretary forwarded a letter to the Board requesting a 45-day extension to respond to Recommendation 95-2, Safety Management.
- On December 1, 1995, the Assistant Secretary for Environmental Management forwarded the Department's eighth quarterly status report for Recommendation 93-4.
- On December 1, 1995, the Assistant Secretary for Environment, Safety and Health forwarded a letter to the Board concerning Recommendation 91-6, Radiation Protection. The letter reported that the management action plan was completed in October 1995 and is being reviewed. The letter reported that the management action plan final report would be forwarded to the Board in December 1995.
- On December 4, 1995, the Deputy Secretary forwarded a letter to the Board addressing concerns the Board addressed in their letters of November 2 and 21, 1995. The Deputy Secretary discussed: substitutes for automatic termination clauses for Department nuclear safety orders, "crosswalk" of revised Department orders, status of guidance documents, and Department responsibilities to provide the Board with all the documents that they require in order to carry out their statutory responsibilities.
- On December 6, 1995, the Deputy Assistant Secretary for Military Application and Stockpile Support forwarded to the Board the November 1995 deliverables scheduled in the Department's 94-4 Implementation Plan. These deliverables included: the Department's assessment report on the adequacy of the contractor's Criticality Safety Approvals and Operational Safety Requirements associated with nuclear operations at the Y-12 Plant; the contractor's evaluation of its criticality safety program; the conduct of operations assessment reports for separate evaluations of contractor conduct of operations implementation and the Department's conduct of operations oversight and support; and the final deliverable of commitment N.4.2 for the Receipt, Storage, and Shipment (RSS) mission area, the contractor closure validation report associated with the restart of RSS.
- On December 8, 1995, the Assistant Secretary for Environmental Management requested an extension from the Board until February 16, 1996 to respond to Board letters of June 15 and July 21, 1995. The subject of the Board letters was an evaluation of design, construction, operation and maintenance of ventilation systems at the Department's plutonium processing and handling facilities.
- On December 28, 1995, the Assistant Secretary for Environment, Safety and Health forwarded a letter to the Board which responded to the Board's letter to the Secretary on December 5, 1995. The letter provided the Department's commitment to provide to the Board a draft of the revised Functions and Responsibilities Manual by February 1, 1996.
- On December 29, 1995, the Assistant Secretary for Environmental Management forwarded a letter to the

Board which provided Phase I results of Recommendation 94-3, Seismic and Systems Safety, regarding the interim storage of plutonium at Rocky Flats and the revised Integrated Program Plan schedule.

- On December 29, 1995, the Assistant Secretary for Environment, Safety and Health forwarded a letter to the Board which provided an Office of Oversight Corrective Action Plan for EH Residents at Oak Ridge as a deliverable under the Recommendation 94-4 Implementation Plan.