The Secretary of Energy
Washington, DC 20585

February 25, 2003

The Honorable Richard B. Cheney
President of the Senate
Washington, D.C. 20510

Dear Mr. President:

I am pleased to forward the annual report for calendar year 2002, *Department of Energy Activities Relating to the Defense Nuclear Facilities Safety Board.* Section 316(b) of the Atomic Energy Act of 1954 requires the Department of Energy (DOE) to submit a written report to Congress addressing the Department's activities related to the Defense Nuclear Facilities Safety Board (Board).

During 2002, DOE formally accepted new Board recommendation 2002-1, *Software Quality Assurance.* In January 2003, DOE also accepted new Board recommendations 2002-2, *Weapons Laboratory Support of the Defense Nuclear Complex* and 2002-3, *Requirements for the Design, Implementation, and Maintenance of Administrative Controls.*

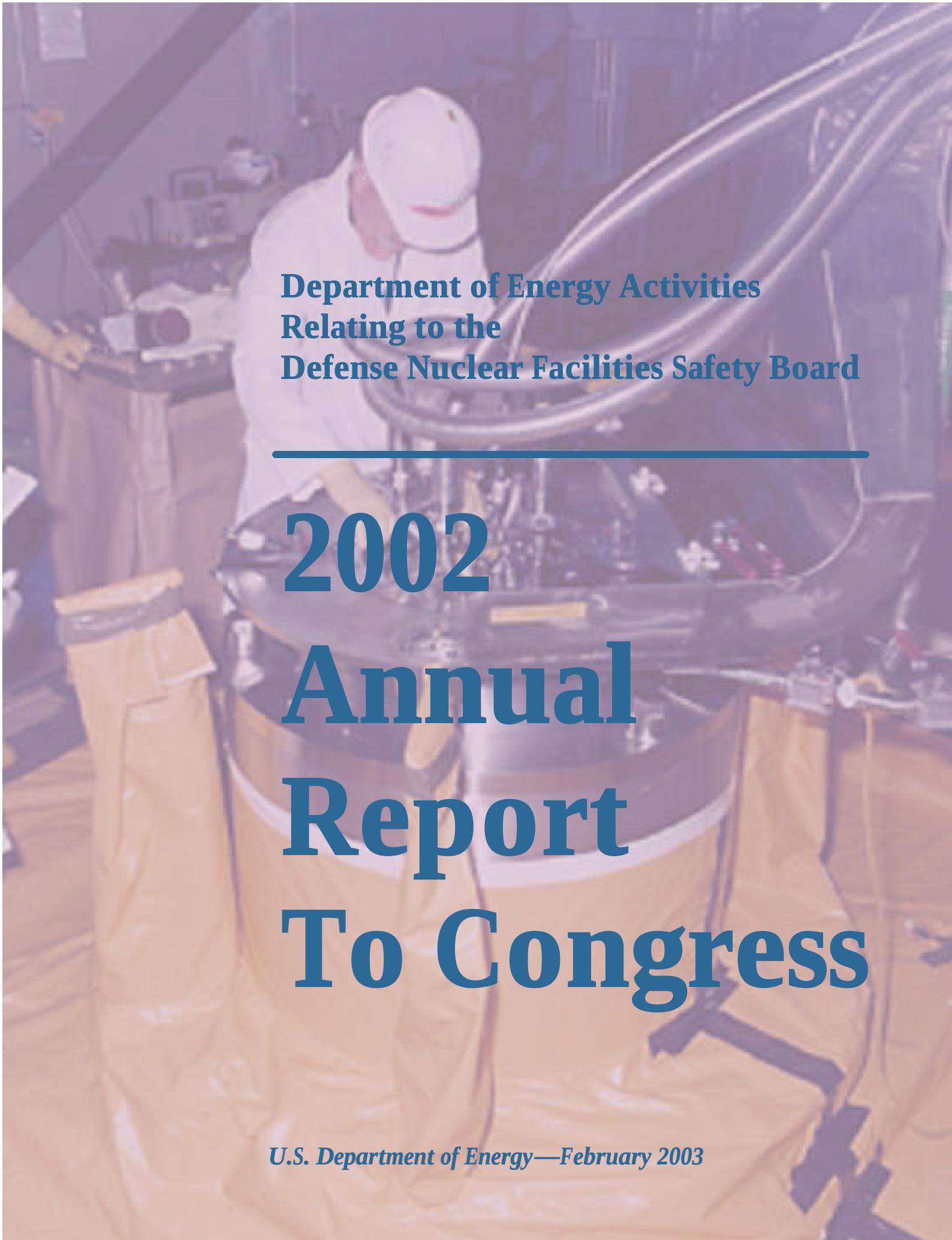
The Department also made significant progress on a number of broad-based initiatives to improve safety. These include upgrading the Department's Federal technical capability, reducing risk through stabilization of excess nuclear materials, and continuing improvements in the Department's integrated safety management programs.

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

Sincerely,

Spencer Abraham

Enclosure



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

2002 Annual Report To Congress

U.S. Department of Energy—February 2003

Annual Report To Congress

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

Calendar Year 2002

U.S. Department of Energy
Washington, DC 20585

February 2003

Executive Summary

The Department of Energy (Department) submits an Annual Report to Congress each year detailing the Department's activities relating to the Defense Nuclear Facilities Safety Board (Board), which provides advice and recommendations to the Secretary of Energy (Secretary) regarding public health and safety issues at the Department's defense nuclear facilities.

In 2002, the Department took active steps to resolve issues identified by the Board in formal recommendations and correspondence, staff issue reports pertaining to Department facilities, and public meetings and briefings. Additionally, the Department has several key safety initiatives to address and prevent safety issues: risk reduction through stabilization of excess nuclear materials, the Facility Representative Program, the Federal Technical Capability Panel (FTCP), Independent Oversight; the Executive Safety Initiatives, a performance-based directives review, and re -engineering of the National Nuclear Security Administration (NNSA). The following summarizes the key activities addressed in this Annual Report.

Activities Pertaining to Board Recommendations

New Recommendations and Implementation Plans

- The Secretary accepted new Board recommendation 2002-1, *Quality Assurance of Safety-Related Software*.
- The Secretary accepted new Board recommendation 2002-2, *Weapons Laboratory Support of the Defense Nuclear Complex* (accepted in January 2003).
- The Secretary accepted new Board recommendation 2002-3, *Requirements for Design, Implementation and Maintenance of Administrative Controls* (accepted in January 2003).

Recommendations Closed

- The Assistant Secretary, Environmental Management, sent a letter to the Board on March 14, 2002, proposing closure of recommendation 96-1, *In-Tank Precipitation System at Savannah River Site*. The Board subsequently closed this recommendation on March 29, 2002.

Recommendations Proposed for Closure

- The Secretary has proposed closure of three other Board recommendations prior to 2002: (1) recommendation 92-4, *Multi-Function Waste Tank Facility at the Hanford Tank Farms;* (2) recommendation 94-1, *Improved Schedule for Remediation in the Defense Nuclear Facilities Complex;* and (3) recommendation 98-1, *Resolution of Safety Issues Identified by DOE Internal Oversight.* These three recommendations remain open.

Other Active Recommendations

- A total of 14 Board recommendations are currently open. The Secretary has proposed closure of three of these recommendations.
- The Department has provided implementation plans for 11 of the open recommendations; implementation plans have not been finalized for the three new recommendations.
- Seven implementation plans are either complete or no longer active.
- The Department is actively working through its remaining implementation plans to resolve the safety issues identified in the Board recommendations.

Activities Pertaining to Department Key Safety Initiatives

Risk Reduction Through Stabilization of Excess Nuclear Materials

- The Department conducted a top-to-bottom review of its Environmental Management program and initiated a number of activities based on the resulting report, *Review of the Environmental Management Program*, issued in February 2002.
- The Office of Environmental Management (EM) overhauled most of the contract fee incentives at its major sites to make fees based on

The Secretary accepted three new Board recommendations:

- 2002-1, *Quality Assurance of Safety-Related Software;*
- 2002-2, *Weapons Laboratory Support of the Defense Nuclear Complex; and*
- 2002-3, *Requirements for Design, Implementation and Maintenance of Administrative Controls.*

EM achieved significant risk reduction in 2002 by stabilizing materials, disposing of waste and materials, and demolishing unneeded facilities.

performance in reducing specific risks from hazardous materials.

- EM accelerated the schedule for risk reduction activities throughout the Department's complex.
- EM made significant contributions to reducing risk from material hazards by stabilizing materials, disposing of waste and materials, and demolishing unneeded facilities.

Executive Safety Initiatives

- The Department developed a self-assessment program guide, with performance objectives and criteria, based on the one used by the Institute of Nuclear Power Operations (INPO).
- The Department has re-engineered its directive DOE Order 232.1B, *Occurrence Reporting and Processing of Operations Information* to make the Department's reporting system more valuable and cost-effective in providing prompt communication of significant events to senior Department management.
- The Department has a new standard process through which existing performance information can be reported in a common format, a complex-wide performance annunciator rating system.
- The Department has developed revisions to the Conditional Payment of Fee clause so that fee penalties are appropriately proportioned to offenses, and partial mitigation of penalties must be considered for self-identification, self-correction, and strong safety programs.
- The Department has identified a number of improvements to existing contract requirements and safety management directives to clarify expectations and to capture best practices for sustaining Integrated Safety Management (ISM).
- The Department continued to review and study safety practices and lessons learned from related industries for potential migration and application at Department facilities.

Performance-Based Directives Review

- The Department conducted a performance-based directives review effort to re-assess the nature and extent of existing Department directives and requirements on contractors in light of adoption of performance-based contracting concepts.
- The directives review identified some contractor requirements documents for elimination and many directives for revision to eliminate unnecessary requirements and duplicative procedures.
- This review resulted in heightened awareness and sensitivity toward developing and sustaining crisp, clear, focused directives in the future. The review resulted in no reduction of Department expectations for excellence in safety management.

Facility Representative Program

- The Department's Facility Representative Program continues to be a centerpiece of Department efforts to upgrade Federal technical capabilities. Over 210 Facility Representatives across the complex provide real-time oversight of operational activities important to mission accomplishment and public safety. The Department requires Facility Representatives to initially qualify to rigorous technical standards and to requalify every three years.
- In 2002, Field Office Managers nominated 15 people for the Department's Facility Representative of the Year award, indicating the strong management support for the program and a high level of achievement across the Department.
- The percentage of fully qualified Facility Representatives increased to 81% in 2002, continuing to be above the Department's goal of 75% and near an all-time high.

Federal Technical Capability Panel Activities

- The Department increased its number of offices meeting the 75% qualification goal from 10 to 14 during 2002.

- The Department increased its overall qualification rate from 59% to 67%.
- The panel is reviewing and updating the 29 functional area qualification standards starting with the areas where significant technical skill gaps have been identified.

Activities Pertaining to Integrated Safety Management (ISM)

- The Department has completed development and initial implementation of ISM throughout the complex. The ISM program has been institutionalized and is now in sustenance /maintenance phase.
- The Department's senior managers and field managers continue to strongly endorse and support ISM as the foundation of the Department's safety management strategy. The Department's senior leadership is driving managers to embrace safety as a core business value and to identify and eliminate barriers to achieving excellence in safety management throughout the Department.

Activities Pertaining to Other Board Interface

- The Department held an Interface Workshop in October 2002 to review strategies for resolving Board-identified safety issues and to share lessons learned on effectively interfacing with the Board and its staff.
- The Department issued 20 new or revised safety directives in 2002 that were reviewed by the Board's staff. In addition, another 40 draft safety directives have received Board staff review and are being finalized prior to issuance.

Summary of the Department's Major Safety Accomplishments

Concrete accomplishments over the past year that have contributed to improved safety at Department facilities include:

- NNSA re-engineered its organizational structure in 2002 and eliminated one layer within their structure, thereby enhancing accountability and efficiency of operations.
- The Department's Office of Independent Oversight and Performance Assurance (OA), which was established in 2001 as the single focal point for DOE independent oversight, conducted seven major inspections of defense nuclear facility sites.
- Rocky Flats made significant improvement in its positive schedule variance during 2002 due to efficiencies gained in the Decontamination and Decommissioning (D&D) of its nuclear facilities. Currently all gloveboxes have been removed from Buildings 771/774 and 776/777 and closure of these facilities is ahead of schedule. Building 707 closure is also proceeding ahead of schedule. Building 371/374 is performing D&D activities in parallel with the ongoing processing of special nuclear materials in the facility, due to be completed in 2003, with an expected improvement in its closure schedule. Due to the accelerated D&D of these facilities and associated cost savings, the D&D of non-nuclear facilities has also been significantly accelerated.
- Pantex repacked over 2,400 pits during 2002, bringing the total number of pits repackaged to over 6,000.
- Each Department site with defense nuclear facilities completed at least one safety system assessment during 2002 aimed at evaluating the readiness of vital safety systems to perform their intended functions.

Safety is a core business value. Barriers to excellence in safety management are being identified and eliminated.

Table of Contents

List of Tables and Figures

I. Introduction

Pursuant to Section 316(b) of the Atomic Energy Act of 1954, the Department submits this Annual Report to Congress, which describes the Department's activities for 2002 pertaining to the Board. This report details the Department's key safety initiatives, implementation of Board recommendations, implementation of ISM, and other Board interface activities.

A. Background

The Board is an independent executive-branch agency established by Congress in 1988 to provide advice and recommendations to the Secretary 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. Figure 1.A provides the locations of the major Department facilities involved in defense nuclear activities across the United States.

The Board communicates with the Department through a variety of mechanisms including formal recommendations, formal reporting requirements, letters requesting action and information, letters providing suggestions, letters providing information such as staff issue reports and trip reports, and Board and the Board's staff requests for information. In addition, the Board communicates with the Department through public meetings, briefings and discussions, and site visits.

B. Overview of the Department's Policy for Interfacing with the Board

The Department and the Board share the common goal of ensuring adequate protection of public and worker health and safety and the environment at the Department's defense nuclear facilities. To accomplish this goal, the Department's interface policy, which is contained in DOE M 140.1-1B, *Interface with the Defense Nuclear Facilities Safety Board*, is to:

- fully cooperate with the Board;

Figure 1.A – Location of Major Department Facilities

- provide access to information necessary for the Board to accomplish its responsibilities;
- thoroughly consider the recommendations and other safety information provided by the Board;
- consistently meet commitments to the Board; and
- conduct interactions with the Board in accordance with the highest professional standards.

C. Overview of the Department's 2002 Activities Pertaining to Board Recommendations

Board recommendations are the most formal and most powerful mechanism the Board uses to prompt action by the Department. As of February 2003, there are 14 open Board recommendations. Seven of the associated implementation plans are either complete or no longer active. The Department has completed all implementation plan milestones for six of these implementation plans, and transferred all remaining open milestones for the seventh plan to another plan (in the case of recommendation 94-1).

Additionally, the Secretary has proposed closure of three of the 14 open recommendations (as noted with an "*" in the list).

Completed or Inactive Implementation Plans

- recommendation 99-1, *Storage of Pits at Pantex,*
- recommendation 98-1, *Resolution of Oversight Findings*;*
- recommendation 97-2, *Criticality Safety;*
- recommendation 97-1, *Safe Storage of Uranium-233*;
- recommendation 95-2, *Safety Management*;
- recommendation 94-1, *Improved Schedule for Remediation**; and
- recommendation 92-4, *Multi-Function Waste Tank Facility at Hanford**.

* Secretary has proposed closure.

New Recommendations Received in 2002

- 2002-1, *Quality Assurance For Safety-Related Software;*
- 2002-2, *Weapons Laboratory Support of the Defense Nuclear Complex*; and
- 2002-3, *Design, Implementation, and Maintenance of Administrative Controls*

In 2002, the Secretary formally accepted one new Board recommendation: 2002-1, *Quality Assurance for Safety-Related Software*. The Department's implementation plan is due in March 2003.

In 2002, the Secretary also received two other new Board recommendations: 2002-2, *Weapons Laboratory Support of the Defense Nuclear Complex*, and 2002-3, *Design, Implementation, and Maintenance of Administrative Controls*. The Secretary accepted Board recommendation 2002-2, *Weapons Laboratory Support of the Defense Nuclear Complex*, on January 8, 2003. The Secretary accepted recommendation 2002-3, *Design, Implementation, and Maintenance of Administrative Controls*, on January 31, 2003.

Table 1.A provides the change in the number of open Board recommendations for each year since the inception of the Board. The data in Table 1.A reflect the evolution of the recommendation process. Initially, Board recommendations addressed specific, highly technical, significant safety issues within the Department's activities.

Over time, the Department has addressed these risks and established integrated programs to improve the Department's overall safety management process. Department success in these areas, combined with an increased use of letters and other notification methods by the Board, has led to the issuance of fewer, often more broad-based recommendations in recent years.

Figure 1.B shows the new Board recommendations at year end for each year.

Figure 1.C provides the net open Board recommendations from 1990 - 2002.

Figure 1.D shows the number of recommendations closed by the Board each year from 1990-2002.

Table 1.B provides key dates for active Board recommendations.

Table 1.C provides a summary status of Board recommendations. The Board closed recommendation 96-1, *In-Tank Precipitation System at Savannah River Site*, in March 2002. The Department intends to make the closure of applicable recommendations a priority in 2003. This

Table 1.A – Historical Trend of Open Board Recommendations

Year	Recs Issued	Recs Closed	Net Change in Open Recs for the Year	Open Recs at Year End
1990	7	0	+7	7
1991	6	0	+6	13
1992	7	8	-1	12
1993	6	1	+5	17
1994	5	1	+4	21
1995	2	6	-4	17
1996	1	4	-3	14
1997	2	1	+1	15
1998	2	0	+2	17
1999	1	9	-8	9
2000	2	0	+2	11
2001	1	0	+1	12
2002	3	1	+2	14*

* Seven implementation plans are complete or inactive. The Secretary has proposed closure on three of the associated recommendations.

will allow the Department to focus its resources on resolving fundamental safety issues addressed by the remaining open recommendations or identified through other interactions with the Board.

D. Department Focus for 2003

In 2003, the Department will be developing new implementation plans for the 2002 Board recommendations the Secretary accepted. In addition, the Department intends to ensure that implementation plans remain valid and workable, to manage actions to completion by the identified due dates, and to propose closure of recommendations when the underlying safety issues are resolved. The most significant challenges involve safety issues that are complex in nature and involve management of cultural changes such as:

- sustaining progress on stabilizing excess nuclear material;
- sustaining and maintaining the Department's safety management system;
- institutionalizing periodic safety system assessments and system engineering programs; and
- upgrading federal technical capability.

The above items are long-term issues that will demand a dedicated multi-year effort to achieve lasting safety improvements. The Department is committed to these ongoing efforts and does not foresee any major shifts or re-direction in these core safety initiatives, thus providing continuity of direction for headquarters, field, and contractor organizations.

Figure 1.B – New Board Recommendations At Year End - (1990 - 2002)

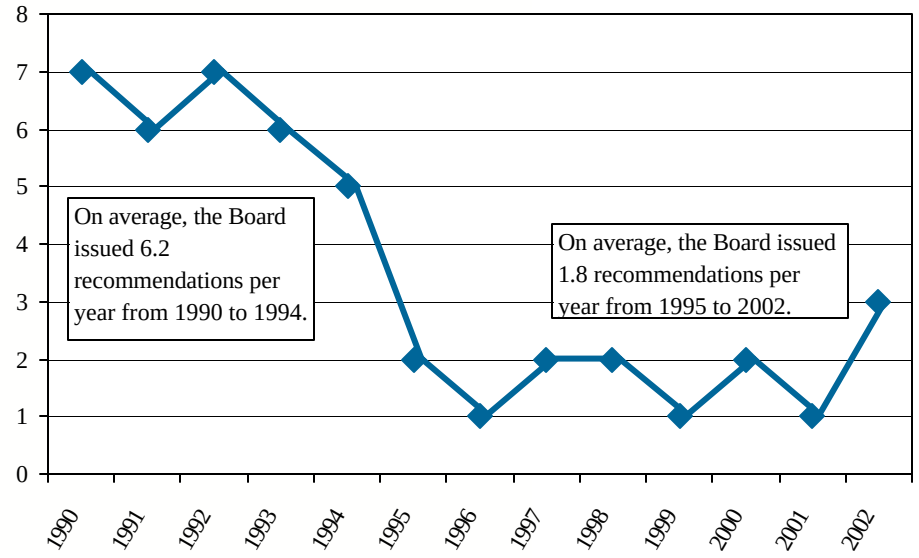


Figure1.C – Net Open Board Recommendations At Year End - (1990 - 2002)

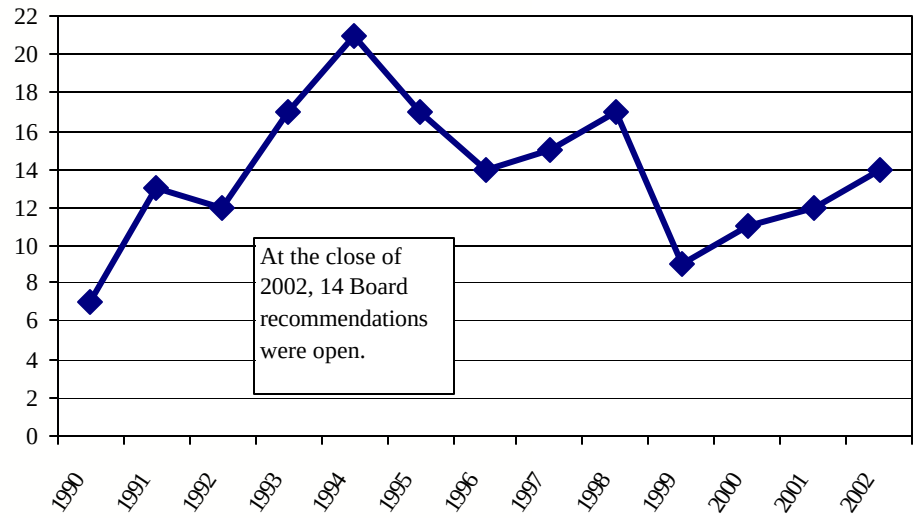
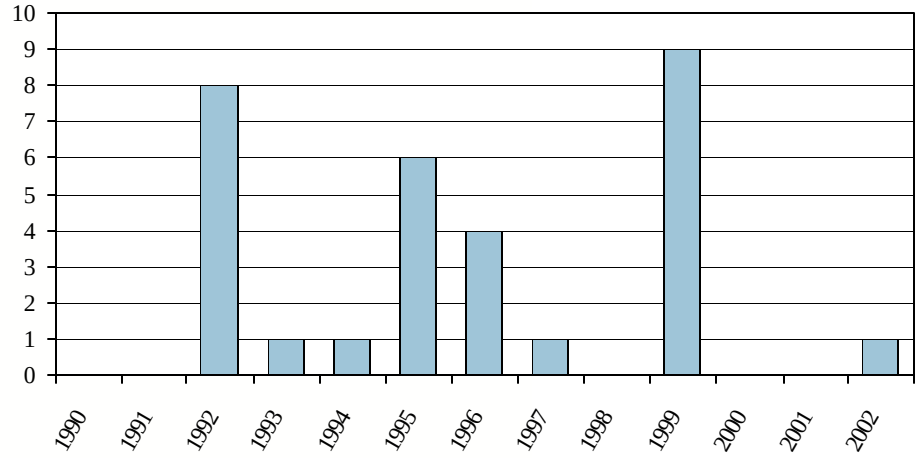


Figure1.D – Recommendation Closures Per Year - (1990 - 2002)



The Department has no current plans or ongoing efforts to revise its existing implementation plans.

Table 1.B – Key Dates for Open Board Recommendations

Rec	Subject	Rec Date	Response Date	Impl. Plan Date
92-4	Multi-Function Waste Tank Facility at Hanford	7/6/92	8/28/92	10/8/97 (Rev. 2)
94-1	Improved Schedule for Remediation	5/26/94	8/31/94	6/8/00 (Rev. 3)
95-2	Safety Management	10/11/95	1/18/96	4/18/96
97-1	Safe Storage of Uranium-233	3/3/97	4/25/97	9/29/97
97-2	Criticality Safety	5/19/97	7/14/97	12/12/97
98-1	Resolution of Safety Issues Identified by Internal Independent	9/28/98	11/20/98	3/10/99
98-2	Safety Management at the Pantex Plant	9/30/98	11/20/98	10/28/02 (Rev. 1
99-1	Safe Storage of Pits at the Pantex Plant	8/11/99	10/12/99	2/1/00
2000-1	Stabilization and Storage of Nuclear Material	1/14/00	3/13/00	7/22/02 (Rev. 2)
2000-2	Configuration Management, Vital Safety Systems	3/8/00	4/28/00	10/31/00
2001-1	High-Level Waste Management at the Savannah River Site	3/23/01	5/18/01	5/10/02 (Rev. 2)
2002-1	Quality Assurance for Safety-Related Software	9/23/02	11/21/02	Due March 2003
2002-2	Weapons Laboratory Support of the Defense Nuclear Complex	10/3/02	1/08/03	Due April 2003
2002-3	Design, Implementation, and Maintenance of Administrative	12/11/02	1/31/03	Due May 2003

Section 315(b) of the Atomic Energy Act of 1954 requires the Secretary to accept or reject, in whole or in part, each Board recommendation within 45 days of its publication, unless an additional 45 days is requested and granted. Section 315(e) of the Atomic Energy Act of 1954 requires the Secretary to provide an implementation plan for each accepted recommendation within 90 days of publication of the acceptance, unless an additional 45 days is needed and the Board is notified.

Table 1.C – 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	Systematic Evaluation Plans		10/24/95
90-6	Rocky Flats, Plutonium in the Ventilation Ducts		10/24/95
90-7	Hanford Waste Tanks – Ferro-cyanide Safety Issue		9/4/96
91-1	Safety Standards Program		10/27/92
91-2	Reactor Operations Management Plan at Savannah River		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		11/8/96
92-1	Operational Readiness of the HB-Line at Savannah River		10/27/92
92-2	Facility Representatives		9/17/96
92-3	HB-Line Operational Readiness Reviews at Savannah River		2/3/93
92-4	Multi-Function Waste Tank Facility at Hanford	X[1]	
92-5	Discipline of Operations		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		3/25/99
93-2	Critical Experiments Capability		12/30/97
93-3	Improving Technical Capability		11/9/99
93-4	Environmental Restoration Management Contracts		6/28/96
93-5	Hanford Waste Tanks Characterization Studies		11/15/99
93-6	Nuclear Weapons Expertise		4/27/99
94-1	Improved Schedule for Remediation	X[2]	
94-2	Safety Standards for Low Level Waste		12/22/99
94-3	Rocky Flats Seismic and Systems Safety		5/27/99
94-4	Deficiencies in Criticality Safety at Oak Ridge Y-12		3/12/99
94-5	Rules, Orders, and Other Requirements		6/10/99
95-1	Improved Safety of Cylinders Containing Depleted Uranium		12/16/99

[1] Secretary proposed closure on December 16, 1998.

[2] Secretary proposed closure on June 8, 2000.

Table 1.C – Summary Status of Board Recommendations, continued

Rec	Subject	Open	Closed
95-2	Safety Management	X	
96-1	In-Tank Precipitation System at Savannah River		**3/29/02**
97-1	Safe Storage of Uranium-233	X	
97-2	Criticality Safety	X	
98-1	Resolution of Safety Issued Identified by Internal Independent Oversight	X[3]	
98-2	Safety Management at the Pantex Plant	X	
99-1	Safe Storage of Pits at the Pantex Plant	X	
2000-1	Stabilization and Storage of Nuclear Material	X	
2000-2	Configuration Management, Vital Safety Systems	X	
2001-1	High-Level Waste Management at the Savannah River Site	X	
2002-1	Quality Assurance for Safety-Related Software	X	
2002-2	Weapons Laboratory Support of the Defense Nuclear Complex	X	
2002-3	Design, Implementation, and Maintenance of Administrative Controls	X	

[3] Secretary proposed closure on November 13, 2001

E. Report Preview

The remaining portions of the annual report are described below:

- Section II, KEY DEPARTMENT SAFETY INITIATIVES, describes broad-based Department activities that affect environment, safety and health;
- Section III, IMPLEMENTATION OF BOARD RECOMMENDATIONS, describes Department activities completed in 2002 to implement Board recommendations accepted by the Secretary;
- Section IV, SAFETY ACCOMPLISHMENTS AND ACTIVITIES AT MAJOR DEFENSE NUCLEAR SITES, describes Department activities at sites and field offices pertaining to ISM; and
- Section V, OTHER BOARD INTERFACE INITIATIVES, describes Department activities to maintain communications and improve interaction between the Department and the Board.

II. Key Department Safety Initiatives

Each of the key initiatives described below involves significant changes from past operating practices. They involve systems-based solutions, cross-organizational/site integration, cross-program integration, and fundamental management culture changes to address underlying safety and management issues. For example, Department determinations about ultimate pathways and long-term dispositions for hazardous materials require deliberate study and integration across the defense nuclear facilities complex. The ongoing transition from expert-based safety management to requirements-based safety management systems continues to be a significant cultural adjustment that needs to be achieved in all organizational parts and levels. The transition requires changes to practices developed over many years by sites, facilities, programs, and organizations operating largely independently and autonomously. Nevertheless, the Department is making progress overcoming these difficult challenges to establish a safety culture that is systems-based, requirements-based, and integrated across programs, organizations, and facilities.

A. Risk Reduction Through Stabilization of Excess Nuclear Materials

A summary of EM accomplishments during 2002 to stabilize excess nuclear materials is provided on Table 2.A.

Top-to-Bottom Review

The Department formed a Top-to-Bottom Review Team to review its Environmental Management program. The Team issued its *Review of the Environmental Management Program* on February 4, 2002. This watershed report shaped many of the activities over the remainder of the year. The team identified 12 specific findings that are summarized in these 4 major findings:

1. The manner in which EM develops, solicits, selects, and manages many contracts is not focused on accelerating risk reduction and applying innovative approaches to doing the work.
2. EM's cleanup strategy is not based on comprehensive, coherent, technically supported risk prioritization.
3. EM's internal business processes are not structured to support accelerated risk reduction or to address its current challenge of uncontrolled cost and schedule growth.
4. The current scope of the EM program includes activities that are not focused on or supportive of an accelerated, risk-based cleanup and closure mission.

To address the twelve findings, the Department's Environmental Management program formed ten project management teams. Each team was assigned a project leader who selected additional members of the team and was tasked to develop a project plan that meets the tenets of DOE Order 413.3, *Program and Project Management for the Acquisition of Capital Assets.* To date, most of the teams have developed a project plan that meets the requirements for a critical decision 2 (CD-2) package. Key requirements for a CD-2 package include a completed Project Execution Plan, Programmatic Risk Analysis, and an External Independent Review.

Actions in Response to Major Findings

In response to major finding one, the Department issued two innovative requests for proposal to contractors. A contract was awarded to CH2M Hill for the Mound project in Miamisburg, OH. The River Corridor solicitation in Hanford, Washington should be awarded in February 2003. Both these solicitations included specific scopes of work, schedule expectations, and estimated costs on which to evaluate the proposals and award the contracts. In addition, the fee for both these projects is structured similarly to the highly successful Rocky Flats Closure Project in Golden, CO.

To address major finding two, the Department's EM program overhauled most of the contract fee incentives at its major sites. Historically, fee was paid to contractors for meeting a wide range of expectations, including compliance with laws and providing reports and deliverables that, while important, did not result in specific reduction of risk at the sites. The new fee incentives are performance-based, and are structured such that fee is paid only

Key Department Safety Initiatives

- Risk Reduction Through Stabilization of Excess Nuclear Materials
- Facility Representative Program
- Federal Technical Capability Program
- Office of Independent Oversight
- Executive Safety Conference
- Performance-Based Directives Review
- Re-engineering of the National Nuclear Security Administration

Table 2.A - Summary of Environmental Management Accomplishments for 2002

Waste Isolation Pilot Project (Carlsbad, New Mexico)

- Disposed of 5,137 m^3 of transuranic (TRU) waste (9% ahead of schedule)
- Achieved required 25 shipment/week waste capacity on schedule

Idaho Environmental Site (Idaho Falls, Idaho)

- Completed cleanup of 20 release sites – 100% of FY02 goal
- Completed initial cleaning of 1st Tank Farm tank
- Disposed of 517 m^3 of legacy Low Level Mixed Waste (LLMW) – 150% of goal
- Completed inactivation of 34 buildings – 126% of FY02 goal
- Emptied 5 Pillar and panel Tanks as of 1/9/02 – 18 months early
- Disposed of 3100 m^3 of TRU waste 10 weeks early
- Transferred 3.965 metric tons heavy metal spent nuclear fuel (SNF) from wet to dry storage
- Treated 294,900 gallons of liquid waste, 73% above goal

Ohio Field Office (Miamisburg, Ohio)

- Completed disposition of Batch 11 & 12 to Toxic Substance Control Act Incinerator
- Completed disposition of 14 industrial facilities at Mound
- Processed/shipped 141,586 tons of Waste Pit Remediation Action Project material to Envirocare
- Completed placement of 187,607m^3 in On Site Disposal Factory and completed Cell 2
- Completed 100% of nuclear material removal from site – two weeks early
- Shipped 259,047 ft^3 Low Level Waste (LLW) to Nevada Test Site ahead of schedule, under budget
- Completed Decontamination and Decommissioning of Health and Safety building two years ahead of schedule

Oak Ridge Reservation (Oak Ridge, Tennessee)

- Completed/started Environmental Management Waste Management Facility
- Completed D&D on four buildings – East Tennessee Technology Park Main Plant
- Completed 70% of soil removal activities
- Disposed of 11,500 m^3 of Intermediate Holding Pond soils at Environmental Management Waste Management Facility
- Completed 6 units of K-25 hazmat/asbestos removal
- Restarted phase two equipment removal activities
- Completed 23 characterization reports at Paducah Material Storage Areas

Office of River Protection (Richland, Washington)

- Initiated High Level Waste (HLW) tank infrastructure and waste transfer pipe construction
- Completed construction/startup of Cold Test Facility
- Interim single shell tank stabilization – on schedule
- Completed construction for AZ tank farm phase I upgrade

Richland Operations Office (Richland, Washington)

- Moved 93 Multi-Canister Overpacks of SNF
- Stabilized all plutonium solutions - completed July 29, 2002
- Deactivated four facilities, decommissioned 19 facilities
- Disposed of 200 m^3 of LLMW
- Disposed of 3,999 m^3 of LLW
- Completed 98% of treatment barrier system for chromium
- Stabilized 1,731 bulk kg. of plutonium residues
- Completed cleanup of 12 waste sites near Columbia River
- Moved 623,413 tons of contaminated soil away from River

Rocky Flats Environmental Technology Site (Golden, Colorado)

- 922 certified "3013" containers produced
- Disposed of 26,109 m^3 of LLW
- Disposed of 2797 m^3 of LLMW
- Disposed of 2903 m^3 of TRU waste
- Completed residue stabilization program (15,440 kg.)
- Cleaned up ten release sites
- Completed 93 work sets in Buildings 371, 707, 771, & 776
- Demolished 68 facilities – 540% of goal

Savannah River Site (Aiken, South Carolina)

- Produced 160 canisters of vitrified HLW in the Defense Waste Processing Facility (DWPF)
- Started HB-Line Phase II
- Packaged 880 kg. of residues
- Closed two liquid waste tanks
- Remediated 14 release sites in fiscal year 2002
- Shipped 169 m^3 TRU waste to the Department's Waste Isolation Pilot Plant (WIPP)
- Disposed of 14,900 m^3 of LLW and LLMW in 2002
- Reduced excess facility footprint by 34,416 ft^2 in TNX area
- Developed and approved a 10 CFR 830 Authorization Basis for the HLW Tank Farms
- Change in HLW priority within the Department that has resulted in an increased emphasis on accelerated waste disposition

Environmental Management Special Projects

1. "Getting More Performance from Performance Based Contracts"
2. "Managing Waste to Reduce Risk"
3. "Managing Waste to Reduce Risk: Spent Nuclear Fuel"
4. "Managing Waste to Reduce Risk: High Level Waste"
5. "Developing a Programmatic Strategy to Accelerate Site Closure"
6. "Safeguards and Security: Reducing the Threat at EM Sites"
7. "Long-Term Stewardship for Protection of Public Health and the Environment"
8. "Using Breakthrough Business Processes to Accelerate Risk Reduction"
9. "Implementing the National Environmental Policy Act Process to Better Support EM Decision Making"
10. "Integrated Program for Accelerated Cleanup of Small Sites"
11. "Packaging and Transportation to Support Accelerated Risk Reduction"
12. "Focusing EM Program Resources on Cleanup"

if specific risks from hazardous materials are identified and eliminated.

To address major finding three, the Department's EM program reassigned most of its site and headquarters managers. Reassignments were based on broadening the experience base for EM executives. The Field Office Managers today have been given the responsibility and accountability to address risk reduction needs.

Major finding four has been addressed in parallel with major finding two through restructuring of the fee incentives. As previously stated, fee is no longer awarded for activities that are not focused on or supportive of an accelerated, risk-based cleanup and closure mission. Many activities are necessary for closure, but do not result in quantitative risk reduction. For example, development of an Environmental Impact Statement (EIS) and a Record of Decision (ROD) are required for some closure activities, but does not result in specific risk reduction at a site. Previous contract incentives would have paid a fee for development of an EIS. The new approach pays fee only for elimination of the risk. If an EIS and ROD are required prior to reducing the risk, then those activities are subsumed by the closure activity and tracked as part of the scope, cost and schedule of the risk reduction activity.

The Department's EM program also initiated a series of baselines and metrics (Gold Charts) to track scope, cost, and schedule risk reduction progress at all sites. This will allow the Department to compare closure progress among the sites. Historically, a variety of different baselines and metrics were used at different sites. This precluded comparison of performance. Under the new system, the Department receives three benefits. First, it can more readily share lessons learned. Second, it provides a basis to compare overhead and infrastructure costs at the sites and initiate cost reduction measures that do not directly support risk reduction. Third, it allows for the Department to more easily identify schedule acceleration opportunities at sites. Gold Chart information includes the following categories:

- radioactive material stabilized and packaged for disposition;
- radioactive material disposed;
- security areas eliminated based on weapons grade material eliminated;
- nuclear, radioactive and industrial facilities completed; and
- environmental sites remediated.

Each of these parameters has a specific unit of measure, and the estimate for each parameter for each site is captured as part of the baseline. Closure progress is then measured against this baseline. These metrics were initiated during the last quarter of 2002, and are being updated quarterly.

B. Facility Representatives Program Activities

The Department's Facility Representative Program is a centerpiece of Department efforts to upgrade federal technical capabilities. Facility Representatives are highly trained Department employees who provide effective day-to-day oversight of contractor operations at the Department's most hazardous facilities. Over 210 Facility Representatives around the complex provide oversight of operational activities important to mission accomplishment and public safety. The Department's standard, DOE-STD-1063-2000, *Facility Representatives*, defines the duties, responsibilities, and qualification for Department Facility Representatives. The Facility Representative Program supports Department managers in ensuring Facility Representatives are competent and technically qualified to perform their job. Key components of the program include:

- complex-wide performance indicator reports provided to the Department's senior managers every quarter since 1999 for evaluation and feedback to improve the program;
- designated Facility Representative Steering Committee Members and Sponsors at each Field and major Headquarters program office to serve as management advocates for Facility Representatives;
- monthly conference calls of the Facility Representative Steering Committee to discuss program

development and operational oversight issues;

- annual Facility Representatives Workshop to promote sharing lessons learned from Facility Representative Programs across the complex and foster the growth of the Facility Representative community; and
- Facility Representative web site <https://www.hss.doe.gov/deprep/facrep> to provide information on the Facility Representative program, qualification standards, vacancy announcements, and other useful information for the Department's Facility Representatives.

The Facility Representative Program experienced several notable achievements in 2002. The most significant accomplishment is that over 81% of the Department's Facility Representatives achieved full qualification status during 2002 (see figure 2.A). This is near the highest qualification rate since program inception. The Department's goal of 75% reflects the facts that full qualification often requires 1-2 years, and turnover is often high as Facility Representatives are frequently selected for roles with added responsibilities. This accomplishment is largely due to targeted qualification training provided in April-June 2001 to accelerate the qualification of existing Department Facility Representatives.

Another achievement for 2002 is that a total of 15 Facility Representatives were nominated for the Facility Representative of the Year award by their field offices. This ties the previous record for the number of nominees and demonstrates continued strong performance as well as management support for the program. Also, in April 2002, DOE-STD-1151-2002, *Facility Representative Functional Area Qualification Standard*, was updated with new competencies and published on the Department's Technical Standards web site.

The 2002 Annual Facility Representatives Workshop was held in Las Vegas, Nevada, from May 29-31, 2002. Departmental personnel in attendance totaled 119, representing every major program and field office. Included in the total were 72 Facility Representatives, an all-time high for the workshop and one-third of the Department's Facility Representative community. Participation by field and headquarters managers at the Annual Facility Representatives Workshop increased to a total of 22. The workshop agenda included a combination of joint sessions, panel discussions, breakout sessions, and a small group discussion. The themes of the three days were: Program Successes and Challenges, Effective Operational Oversight, and Managing Your Career. The workshop concluded with a tour of the Department's Remote Sensing Laboratory in North Las Vegas, NV.

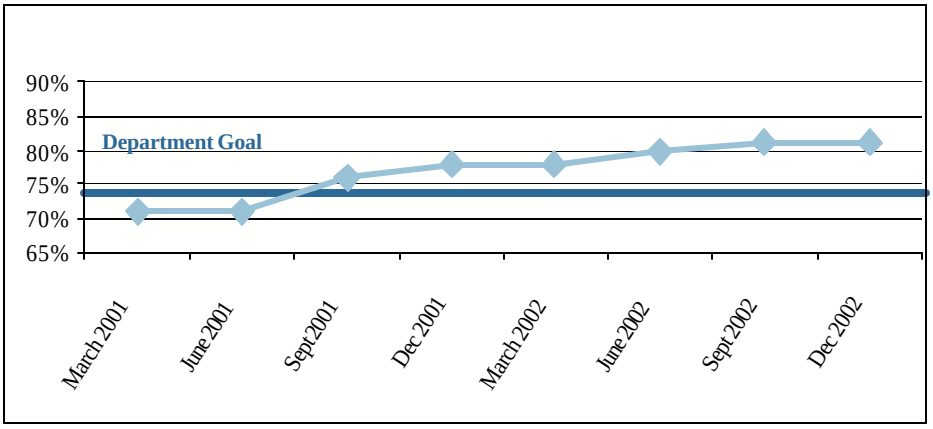
Also at the workshop, the Department-wide 2001 Facility Representative of the Year Award was presented to an employee of the Office of River Protection (ORP). His noteworthy accomplishments included the discovery and evaluation of deficiencies associated with the lifting of high-level waste pit cover blocks weighing over 25,000 pounds. He prepared a safety notice on the issue, and other sites with waste pit blocks discovered similar deficiencies. The sites developed interim controls to address the issue. He also led several assessments to verify the operability of facility safety systems and to identify hazards associated with work in a confined space.

Oversight performed by Facility Representatives provides Department line managers with accurate and objective information on the effectiveness of contractor work performance and practices, including implementation of ISM. The Department's experience has shown that when personnel are dedicated to this function, the information that they provide can be used proactively to ensure that work

The Manager of the Office of River Protection provided the workshop keynote address at the 2002 Facility Representatives Workshop. The theme of his address was "Improving Risk Reduction and Cost Effectiveness." He outlined five key attributes of effective Facility Representatives:

1) *train to and maintain the competencies necessary to your job;*
2) *maximize your time in the facilities;*
3) *be thorough;*
4) *communicate to gain and give critical information; and*
5) *maintain your proper place as a full status Facility Representative, replete with all necessary exceptional qualities.*

Figure 2.A - Percentage of Fully Qualified Facility Representatives



Facility Representatives Web Site
https://www.hss.doe.gov/deprep/facrep/

is completed in a safe and environmentally responsible manner. Further, Facility Representatives have obtained the strong understanding of technical operations to successfully perform in positions of increased responsibility throughout the Department.

C. Federal Technical Capability Program (FTCP) Activities

The Department's Federal Technical Capability Program (FTCP) activities, under the auspices of the Deputy Secretary of Energy, represents a significant effort aimed at improving the Department's overall technical capability of its federal workforce. In part, this program was established in response to Board recommendation 93-3, *Improving Technical Capability*. The Deputy Secretary established a Federal Technical Capability Panel (Panel) to oversee and resolve issues affecting the FTCP. The Panel consists of senior managers designated as Agents to represent headquarters and field elements with defense nuclear facility responsibilities, including the NNSA. ORP's Manager is the Panel chair, and the Assistant Manger for Environment, Safety and Health (ES&H) at Oak Ridge (ORO), serves as the vice chair of the Panel.

Specific functions of the Panel include overseeing the Technical Qualification Program (TQP) which encompasses the Senior Technical Safety Manager Program, conducting periodic assessments of the effectiveness of the FTCP using internal and independent experts, and providing recommendations to senior Departmental officials regarding the Department's technical capability. During 2002, the Panel completed a number of activities which were summarized in its *Annual Report to the Secretary of Energy on the Status of Federal Technical Capability Related to the Safe Operation of Defense Nuclear Facilities*, released in October 2002; this report is available on the Panel's web site at<http://www.hss.doe.gov/deprep/ftcp>.

One of the Deputy Secretary's main challenges to the Panel for 2002 was to provide performance measures routinely gathered and reported to senior managers in the Department in order to better monitor improvements in the technical qualification program. In response to this challenge, the Panel developed a set of performance indicators and corresponding goals to be reported quarterly in performance indicator reports to senior managers. The performance indicators target the status of filling technical skill gaps including overall qualification percentage in the TQP, the availability of technical positions at closure sites, and the number and retention rate of entry-level technical interns in the Department's technical intern programs. The Departmental target goal for overall qualification in the TQP is 75%. The December 31, 2002 Quarterly Performance Indicator Report showed steady improvement at 67% (see figures 2.B and 2.C for more information). The quarterly performance indicators are useful to both the Agents and the Department's senior managers as a tool to identify areas where progress can be made in improving the technical competence of the workforce.

As a result of successful, targeted training in 2001 to upgrade qualification rates of Facility Representatives, the Panel has begun overseeing the development of focused training courses to address increasing qualification. For example, the Savannah River Operations Office (SR) successfully held a training course aimed at increasing the numbers of qualified personnel in the Senior Technical Safety Manager program. This course was well received and attended by headquarters and field office personnel alike. The Panel plans to promote similar efforts to increase departmental qualifications in other areas.

One of the major actions from the 2002 Annual Action Plan was to develop a plan and schedule to review and update the 29 functional area qualification standards that are a part of the TQP and to incorporate them into the Department's Technical Standards Program. The plan and schedule were developed and promulgated by the Panel in April 2002. As part of this effort, the competency statements in the standards are being reviewed, updated or added to, if necessary, to cover safety system oversight roles for each functional area. The Panel placed priority on updating the mechanical systems, electrical systems, instrumentation and control, fire protection, and criticality safety qualification standards since technical skill gaps have been identified in those areas.

DOE Offices with at least 75% of its technical personnel fully qualified

- Chicago Operations Office
- Idaho Operations Office
- Kansas City Site Office
- Nevada Site Office
- Ohio Field Office
- Ohio – Fernald Office
- Ohio – Miamisburg Office
- Ohio – West Valley Office
- Office of River Protection
- Rocky Flats Field Office
- Richland Operations Office
- Savannah River Operations Office
- EH Headquarters Office
- NNSA Headquarters Office

As part of its ongoing mission, the Panel ensures work force analysis and staffing plans are maintained by organizations with responsibility for defense nuclear facility safety. The analyses identify critical technical skills that must be maintained to assure safe operations of those facilities. Existing shortages and plans to deal with the shortages in the near-term are also identified. The analyses are being used as part of the strategy to insure that the Department has the critical technical skills necessary to carry out its missions and as a basis for recruitment and development programs.

In January 2002, the Panel compiled a Department-wide analysis identifying the need for 31 additional Full-Time Equivalent persons to provide necessary oversight of contractor safety systems. The majority of the technical skill gaps from this analysis are in mechanical engineering, fire protection, electrical engineering, and instrumentation and control. Two-thirds of the skill gaps reside within four Operations and Area Offices: ORP, Los Alamos Site Office (LASO), Oakland Operations Office (OAK), and Y-12 Site Office (YSO). These gaps can be partially addressed in the near-term using technical expertise available at Headquarters and the Albuquerque Service Center, using support service contractors, and using the Authorization Basis and Facility Representative staff at the sites. Other long-term actions may be warranted. These include: 1) accelerating hiring actions to close technical gaps, 2) assigning existing staff with the necessary technical background doing other duties to these assignments, 3) cross training and qualifying existing personnel to develop them into safety system experts in needed areas, or 4) transferring (at an appropriate time) existing safety system experts from closure sites to sites that have technical skill gaps. The Panel continues to monitor this area using performance indicators to help ensure that the identified gaps are closed.

The Panel continues to support and work to increase participation in the Departmental Intern programs, focused on recruiting and training highly talented new federal employees. In the two intern programs currently active - the Technical Intern Program and the Technical Leadership Development Program - a total of 31 interns recruited from over 20 colleges and universities are participating at 7 different field and headquarters locations. These programs have a 94% retention rate, with nearly 40% of the participants having advanced degrees. Over a third of the participants have degrees directly related to environmental areas of study, and over 55% are women and/or members of minority groups.

As part of the Department's Human Capital Management Initiatives, the Panel has

FTCP Web Site
https://www.hss.doe.gov/deprep/ftcp/

Figure 2.B - Number of DOE Offices Meeting Technical Qualification

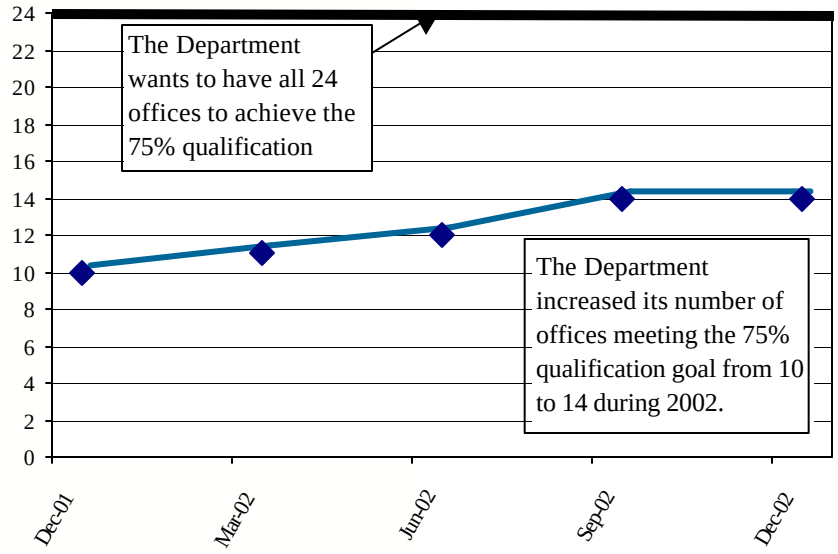
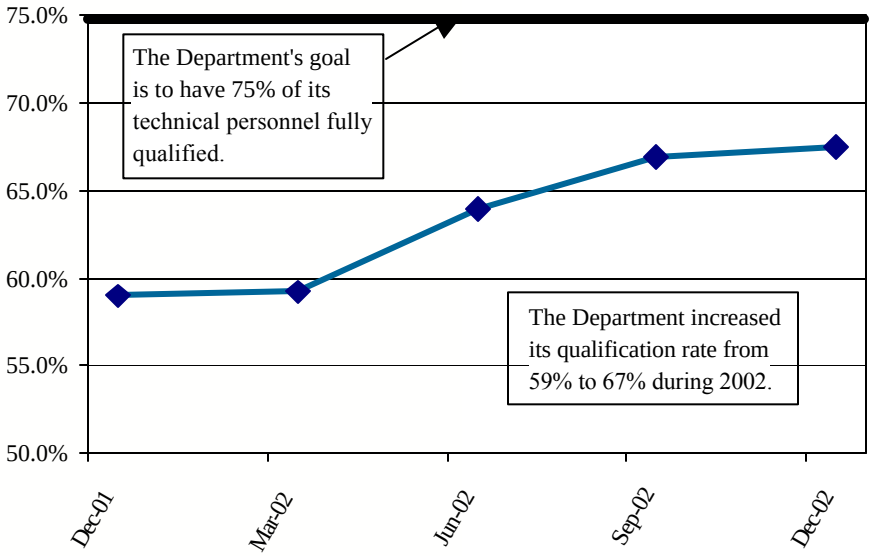


Figure 2.C - Percent DOE Technical Personnel Fully Qualified



actively supported the development and implementation of the new corporate Career Intern Program. This program is a two-year entry-level program for highly qualified technical and business new hires and focuses on addressing technical skills gaps and succession planning issues. Recruiting is currently taking place and is based on identified departmental skills needs. The kick-off for this program is scheduled for March 2003 and the program has a target of 25 participants.

Department Sites Undergoing Major Inspections in 2002 by the Office of Independent Oversight and Performance Assurance

- Hanford Site
- Kansas City
- Lawrence Livermore National Laboratory (LLNL)
- Los Alamos National Laboratory (LANL)
- Nevada Test Site
- Pantex Plant
- Waste Isolation Pilot Program (WIPP)

D. Office of Independent Oversight and Performance Assurance (OA)

In 2001, the Department established OA as the single focal point for Department independent oversight of Department site ES&H programs as well as site safeguards and security, cyber security, and emergency management programs. In 2002, the Department's OA conducted seven ES&H inspections of defense nuclear facility sites. All findings were entered into the corrective action system in accordance with the Department's response to Board Recommendation 98-1, *Resolution of Safety Issues Identified by DOE Internal Oversight.*

During 2002, the OA continued to enhance its internal independent oversight program through various initiatives including use of technical specialists from various field elements as part of the field augmentation program. OA identified several areas of emphasis during 2002 including Department line management oversight, contractor self-assessments and other feedback mechanisms, implementation of the core functions, and functionality of safety-related systems. The reviews of safety related systems provide a detailed engineering review of selected safety systems and support Department efforts to respond to Board recommendation 2000-2, *Configuration Management Vital Safety Systems.*

Also during 2002, the Department issued revised directive DOE Order 470.2B, *Independent Oversight and Performance Assurance Program*, establishing that the Department now has a single consistent process for addressing internal independent oversight findings.

E. Executive Safety Initiatives

On December 11-12, 2001, Under Secretaries Robert Card and General John Gordon held an Executive Safety Conference in Washington, DC to launch a series of initiatives to embrace safety as a core business value and manage safety more efficiently and effectively. The Department's administration strongly endorsed ISM as a foundation of the Department's safety management strategy. A central Department safety objective is to achieve safety performance and reliability to enable reliable and efficient delivery of the Department's nuclear and high-hazard missions. As follow-on projects generated by the participants at the 2001 Executive Safety Conference, the Department accomplished the following during 2002:

- **Self-Assessment Best Practices.** The Department conducted several workshops to share and identify best practices and lessons learned for self-assessment of ES&H performance. These included the May 2002 Integrated Safety Management Forum in Albuquerque, New Mexico, the August 2002 Integrated Safety Management Workshop in Idaho Falls, Idaho, and the September 2002 Behavior-Based Safety Workshop in Berkeley, California.

- **Self-Assessment Certification.** The Department developed a self-assessment program guide, based on the one used by the INPO. The guide identifies performance objectives and criteria for self-assessment programs. The Department has initiated a self-assessment certification pilot program at Lawrence Berkeley National Laboratory, with a final review planned for March 2003. The objective of self-assessment certification is to improve the quality of self-assessments and thereby reduce the need for additional line management assessments.

- **Standards Management Policy.** The Department established a Standards and Requirements Identification Improvement Council (SRIIC) to recommend revisions to directives and guidance documents so that they are applicable to the various broad missions of environmental

management, research, construction, and other non-defense related activities. The SRIIC proposed a new Standards Management Policy to supercede existing DOE P 450.3, *Authorizing Use of the Necessary and Sufficient Process for Standards-based Environment, Safety and Health Management.*

- **Directives Review Effort.** The Department conducted a directives review effort to re-assess the nature and extent of existing Department directives and requirements on contractors in light of adoption of performance-based contracting concepts. This effort is described in more detail in the next section.

- **Safety Basis Rule Implementation.** EM completed several actions to improve the quality of its implementation of the DOE Safety Basis Rule (10 CFR 830, Subpart B). EM provided clearer expectations for producing approvable safety basis documents in a timely manner. EM provided flexibilities and tools to aid the field offices in determining the level of safety analysis documentation required for its various facilities. EM developed a basis for implementing a Subpart B safety basis for a large number of inactive waste sites, which already developed a hazards analysis and implemented hazards controls through environmental regulation.

- **Occurrence Reporting System.** A Department task force re-engineered the Department's directive DOE Order 232.1B, *Occurrence Reporting and Processing of Operations Information*, to make the Department's reporting system more valuable and cost-effective. The key changes included regrouping and combining existing reporting criteria, raising and lowering reporting thresholds where appropriate, and adding a few new reporting criteria. By reducing the number of nuisance reports, the enhanced system better accomplishes its primary objective of providing prompt communication of significant events to senior Department management.

- **Performance Metrics System.** Another Department task force developed a standard process through which existing performance information could be reported in a common format, a complex-wide performance annunciator rating system. An "annunciator panel," with over 20 specific annunciators, is used to consolidate and display a wide variety of performance metrics. Individual annunciators include regulatory performance, quality assurance, radiation protection, criticality safety, and configuration management. Each annunciator is displayed with one of the following performance ratings: "Outstanding," "Good," "Marginal," "Poor," or "Not Applicable."

- **Lessons Learned Sharing System.** Senior contractor managers at NNSA sites developed a new approach for sharing lessons learned at other NNSA sites. Each senior manager identified two major lessons learned at his site. Each manager reviewed the lessons from the other sites for applicability and usefulness to his own site. Each manager chose at least one lesson learned at another site for implementation. A lessons learned web site was also developed for sharing these lessons to other parts of the organization.

- **Contract Clause Requirements for Safety Management.** Three main contract clauses contain requirements for safety management at Department sites: the ISM clause (DEAR 970.5223-1), the Laws clause (DEAR 970.5204-2), and the Conditional Payment of Fee clause (DEAR 970.5215-3). The Department has developed revisions to the Conditional Payment of Fee clause so that fee penalties are appropriately proportioned to offenses, and partial mitigation of penalties must be considered for self-identification, self-correction, and strong safety programs.

- **Idaho Workshop on Sustaining ISM Systems.** The August 2002 ISM workshop in Idaho Falls, Idaho, facilitated the sharing of lessons learned and best practices for

Four Areas of Executive Safety Initiatives

- Safety Oversight
- Safety Requirements
- Experience and Lessons Learned
- Contracts and Subcontracts

Key Safety Management Contract Clauses

- The ISM Clause (DEAR 970.5223-1)
- The Laws Clause (DEAR 970.5204-2)
- The Conditional Report of Fee Clause (DEAR 970.5215.3)

sustaining effective ISM systems, including the conduct of effective annual ISM assessments and annual ISM description updates. The workshop identified a number of improvements to existing contract requirements and safety management directives to clarify expectations and to capture best practices for sustaining ISM.

- **Subcontractor Safety Performance.** A joint Department and contractor working group identified and shared a number of best practices for improving safety performance of subcontractors on Department activities. Effective subcontractor safety performance must be a priority throughout the life cycle of subcontracts, from the pre-qualification stage, to the bid request and award, and through subcontract monitoring and close-out. Several sites achieved significant improvement in subcontractor safety performance through implementation of the various best practices.

- **Executive Safety Summit.** The Department held a follow-on Executive Safety Summit in December 2002, attended by senior Department and contractor managers from all site and activities. At the summit, outside speakers from the commercial nuclear and chemical industries presented their approaches and results in improving safety. Various summit participants reviewed the status and results from ongoing safety initiatives, and breakout groups discussed and adopted new initiatives for the coming year.

- The executive safety initiatives discussed above have effectively engaged and energized senior managers throughout the Department complex, and heightened the attention and awareness on safety issues and safety improvement.

F. Performance-Based Directives Review

The Department initiated a performance-based directives review in October 2001. The objective of this review was to re-assess the nature and extent of existing Department directives and requirements on contractors in light of adoption of performance-based contracting concepts. In keeping with the main tenets of performance-based contracting, the review sought to sustain desirable results and outcomes (the "what") while minimizing the prescription of methods and procedures (the "how to"). The review focused on identification and elimination of unnecessary, non-value added, inappropriate, and duplicative process ("how to") requirements. The review identified changes to directives that would mitigate the impact of overly bureaucratic procedural requirements, and substitute less costly and more effective approached or standards. The scope of directives considered included 24 directives "of interest to the Board" (see Appendix A for a complete listing of directives of interest to the Board).

Directives review teams were formed to include technical experts, stakeholders, and facilitators. The Department openly solicited comments and input from Department contractors and other stakeholders on directives and requirements that should be considered for revision. The directives review teams performed structured analyses and made recommendations regarding the need to alter existing directives and requirements. The recommendations of the directives review teams were provided to the Department's Order Review Panel for disposition.

The Department's Order Review Panel was made up of senior Department executives, including the two Under Secretaries, the General Counsel, and the Director of the Office of Management, Budget and Evaluation. The Panel considered team recommendations, decided upon tentative dispositions, and provided them to originating offices for final comment. The Panel issued final dispositions in January 2003. Implementation of Panel dispositions will involve some revisions and consolidations of existing Department directives and will be completed during 2003 in accordance with the Department's directives procedures as outlined in DOE O 251.1A, *Directives System Order*.

The result of the review effort is that a few contractor requirements documents will be eliminated. The review, however, resulted in no wholesale elimination of the orders or

Two Directives Identified As Needing No Changes

DOE Manual M 140-1.1B, *Interface with the Defense Nuclear Facilities Safety Board*

DOE Order O 425.1B, *Startup and Restart of Nuclear Facilities*

the associated contractor requirements documents (CRDs). Many directives will be revised to eliminate unnecessary requirements and duplicative procedures. The review did not result in identification and adoption of numerous national, industrial, and commercial standards to replace existing Department directives. The scope and applicability of various directives will be tightened up and clarified. This review will result in heightened awareness and sensitivity toward developing and sustaining crisp, clear, focused directives in the future. The review resulted in no reduction of Department expectations for excellence in safety management.

G. Re-Engineering of the National Nuclear Security Administration (NNSA)

The Department's NNSA was established in March 2000 as a semi-autonomous agency that carries out the national security responsibilities of the Department. It maintains the U.S. nuclear weapons stockpile, promotes international nuclear non-proliferation, and provides the U.S. Navy with safe and effective nuclear propulsion. Since its establishment, the NNSA has been evaluating how best to restructure its organization, assignments, processes, and staff to efficiently meet its responsibilities.

In December 2002, NNSA Acting Administrator Linton Brooks announced the key results of NNSA's re-engineering efforts. The new NNSA organizational structure will eliminate a layer of management and set the agency on a course to achieve a 20 percent reduction in federal personnel by the end of fiscal year 2004 (September 2004). The reorganization follows the principles of the President's Management Agenda, which strives to improve government through performance and results. Ambassador Brooks said, "In keeping with President Bush's vision, we are streamlining operations and oversight while clarifying roles and responsibilities. The new, more responsive organization will improve federal management of our nuclear weapons complex."

While the entire organizational structure is changing, the NNSA field organization will see the most dramatic change. Currently, the site offices that oversee NNSA's contractor operations report to headquarters through three operations offices in Oakland, California, Las Vegas, Nevada, and Albuquerque, New Mexico. All site offices will report directly to the NNSA administrator through the principal deputy. The operations office system will be eliminated.

An NNSA Service Center, providing procurement, human resources and other support services to the site offices, will be established using the expertise of the former operations offices. The NNSA Service Center is located in Albuquerque, New Mexico. Consolidation of personnel will be completed by the end of September 2004, after which the Oakland office will close and the Nevada office will be reduced in size and concentrate on management of the Nevada Test Site (NTS).

Overall, approximately 20 percent will be trimmed from NNSA's federal workforce at headquarters and in the field by the end of September 2004, with headquarters taking a 30 percent cut. The reduction will be accomplished through managed attrition. Security forces and the Navy Nuclear Propulsion program will not be affected by the staff reductions.

Ambassador Brooks said, "We have worked hard this year to make sure our reorganization is done right. We will manage the reductions in a way that is fair to our outstanding people, while ensuring that the NNSA of the future will have a world-class business environment that eliminates duplication and micromanagement and provides more effective federal oversight."

Re-engineered NNSA Site Offices

- Kansas City Site Office
- Livermore Site Office
- Los Alamos Site Office
- Nevada Site Office
- Pantex Site Office
- Sandia Site Office
- Savannah River Site Office
- Y-12 Site Office
- Albuquerque Service Center

III. Implementation of Board Recommendations

The Board issues recommendations to the Secretary on issues or circumstances that need to be resolved to ensure adequate protection of the public health and safety. The Secretary is required to respond to each Board recommendation within 45 days of publication of the recommendation in the *Federal Register*. In addition, the Secretary must submit an implementation plan to the Board within 90 days of the date that the Secretary's acceptance of the recommendation is published in the *Federal Register*. The Department's policy is to begin implementation plan development immediately after the recommendation is received and in parallel with the development of the Department's response as outlined in DOE M 140.1-1B, *Interface with the Defense Nuclear Facilities Safety Board*.

The Board has issued 45 recommendations to the Secretary since the Board was established in 1988. The Secretary has accepted 39 of the Board's recommendations in their entirety, and accepted 3 with minor exceptions and clarifications. For each recommendation, the Secretary approved the Department's implementation plan. Implementation plans for the three most recent recommendations have not yet been established. Thirty one of the Board's recommendations are now closed. Fourteen recommendations remain open, of which, the Secretary has proposed closure for three open recommendations. The Department is actively taking steps to resolve the safety issues in the remaining eleven recommendations.

A. Recommendation Closures

Recommendation 96-1, In-Tank Precipitation System at the Savannah River Site (96-1)

The Board closed one recommendation in 2002. On March 14, 2002, the Assistant Secretary of Environmental Management proposed closure of this recommendation. On March 29, 2002, the Board closed this recommendation.

The Board issued 96-1 on August 14, 1996. The recommendation addressed concerns at the In-Tank Precipitation (ITP) facility related to potential generation and release of flammable benzene in the primary process tank.

In January 1998, it was concluded that high benzene generation rates and precipitate solids instability would not support the ITP process as designed. As a result, the Department suspended ITP restart preparations pending the outcome of a system engineering evaluation of potential options for removing cesium from stored HLW solutions. The Westinghouse Savannah River Company (WSRC) completed the alternatives evaluation in November 1998. However, Savannah River concluded that additional research and development (R&D) was required to address uncertainties associated with the final "short list" alternatives before a preferred alternative could be selected. Additional R&D was completed in 1999 and 2000, and the Department issued a ROD in August 2001 to document the preferred alternative selection.

B. Recommendations Previously Proposed for Closure

The Department proposed closure of three recommendations prior to 2002:

- recommendation 98-1 (98-1), *Resolution of Safety Issues Identified by DOE Internal Oversight;*
- recommendation 94-1 (94-1), *Improved Schedule for Remediation in the Defense Nuclear Facilities Complex;* and
- recommendation 92-4 (92-4), *Multi-Function Waste Tank Facility at the Hanford Tank Farm.*

These three recommendations remain open.

Recommendation 98-1, Resolution of Safety Issues Identified by DOE Internal Independent Oversight

The Board issued 98-1 on September 28, 1998. It was concerned with specific weaknesses in the Department process to effectively address and resolve findings identified by its internal independent Office of Oversight. The Secretary accepted the recommendation on November 20, 1998, and approved the Department's implementation plan for establishing a

The Board closed one recommendation in 2002: Recommendation 96-1, *In-Tank Precipitation System at the Savannah River Site.*

In November 2001, the Secretary proposed closure of recommendation 98-1, Resolution of Safety Issues Identified by DOE Internal Independent Oversight.

systematic program for developing, tracking, reporting, and effectively resolving Office of Oversight identified findings on March 10, 1999. The implementation plan outlined specific actions, deliverables and milestones for establishing a consistent and disciplined process to improve the Department's corrective action process. It included establishing clear roles, responsibilities, and authorities; a process for elevation of disagreements up to the Office of the Secretary; senior management involvement; corrective action tracking and reporting, and verification of corrective action closure. The Department completed all implementation plan commitments as of September 2000.

The Department has continued to upgrade and improve institutionalization of the Corrective Action Management Program (CAMP) to effectively address and resolve findings that could adversely impact the environment, safety and health of Department sites, the workers, and the public; and the successful completion of the Department mission. This has resulted in:

- increased dialogue with line managers and meaningful feedback on all aspects of program implementation;
- more active line management involvement in quality review and follow-up of corrective actions;
- clearly established lines of program responsibilities and authority;
- improved quality, timeliness and effectiveness of corrective actions to resolve findings; and
- enhanced process for tracking and reporting program status.

The key CAMP accomplishments related to implementing and institutionalizing the Department's 98-1 implementation plan during 2002 include the following:

- The Department initiated several actions to enhance the security and operability of the Corrective Action Tracking System (CATS) database used to track and report the status of all corrective actions. This included limiting reader access of this potentially sensitive information available to the general public by implementing a simple reader-only access registration process; reverifying all Department-wide authorized database editors; expanding the database fields which CATS editors may change; and conducting a conference with all editors to explain these actions and exchange other CATS related information.
- The Department has enhanced the quality of the Quarterly CAMP Report to the Office of the Secretary and senior DOE Headquarters and field managers, and initiated several actions to keep managers aware of their corrective action status. This includes e-mail notifications to the responsible managers (every 30 days) of specific late Corrective Action Plans (CAP); periodic reports to Corrective Action Management (CAM) Team members on the status of late corrective action plans and late corrective actions of the organizations they represent; and briefings to cognizant secretarial officer representatives on program status prior to publication of the quarterly report. These initiatives have assisted responsible managers in following up the status of corrective actions and updating their program activities.
- The Department updated the CAM Team Charter outlining the mission and functions of this cross organizational working group consisting of representatives from DOE Headquarters and field offices supporting and coordinating implementation of the CAMP. The CAM Team has continued periodic meetings (at least quarterly) and team members have been instrumental in participating and providing feedback on all organizational and DOE-wide initiatives to enhance program implementation.

The Department is drafting the DOE CAMP Manual which will provide a clear, comprehensive, systematic and effective process to address, track, report, complete, and assure effective resolution of all CAMP related assessment findings. This includes OA ES&H and emergency management appraisal findings; Type A accident

investigation Judgments of Need; and other findings identified during the conduct of special focused assessment initiatives directed by the Secretary or Deputy Secretary to be tracked and reported in accordance with the provisions of the CAMP. The manual will address the Office of Environment, Safety and Health (EH) responsibilities and authority for managing the CAMP, the CAM Team that supports and coordinates the CAMP, and more detailed instruction and guidance to assist line managers in implementing the program. These activities have all been institutionalized over the four years the CAMP has been in existence. The manual will also add two new requirements directed by senior management, which will significantly enhance the CAMP. They are:

- Line management follow-up assessments of completed corrective actions to assure their effectiveness in resolving each finding and preventing recurrence of the same or similar findings.
- Line management development and sharing of lessons learned from each finding.

The Department submitted the final report to 98-1 in November 2001. The report outlined a summary of actions taken to resolve the issues addressed in the Board's recommendation, proposed closure of the recommendation. The Board acknowledged these accomplishments, but required the update of specific Department Headquarters Functions, Responsibilities and Authorities (FRA) documents to address the process developed under 98-1 before the Board will close the recommendation. These FRA documents are being updated but not all revisions have been published.

In 2002, FRA documents were developed and approved for the OA and the EH. The FRA document for NNSA is expected to be approved in April 2003.

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

The Secretary proposed closure of 94-1 in a June 8, 2000 letter to the Board. This recommendation addressed the hazards and risks involving the storage of nuclear materials within the Department's defense nuclear facilities complex. The most urgent safety issues described in the recommendation have either been corrected or had compensatory measures put in place to protect workers and the public until stabilization can be completed.

In January 2000, the Board issued recommendation 2000-1, *Stabilization and Storage of Nuclear Material*, (2000-1) to reemphasize the urgency the Board places on the remaining nuclear material stabilization activities. The Department continues to view the scope of the 2000-1 recommendation as essentially the same as the remaining 94-1 activities. In the Department's 2000-1 implementation plan, the Department included all remaining 94-1 activities. Accordingly, with the approval and delivery of the 2000-1 implementation plan in June 2000, the Secretary proposed closure of 94-1 to the Board. This recommendation remains open while the Board monitors progress on 2000-1 plan implementation. A Revision 2 to the implementation plan for *Stabilizing and Storage of Nuclear Material* was approved by the Secretary in July 2002.

In June 2000, the Secretary proposed closure of recommendation 94-1, Improved Schedule for Remediation in the Defense Nuclear Facilities Complex.

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

The Secretary proposed closure of 92-4 in a December 16, 1998, letter to the Board. This recommendation addressed safety issues at the Tank Waste Remediation System (TWRS) Multi-Function Waste Tank Facility (MWTF) project at the Hanford Site. The recommendation identified three areas of concern:

- project management structure;
- design bases (systems engineering) for MWTF; and
- technical and managerial competence.

In developing an implementation plan to address these issues, the Department expanded the scope of its response to apply an integrated systems approach to define, plan, control, and execute the overall Hanford mission. While implementing this approach, the Department re-evaluated the need for the MWTF project, canceled the project, and altered other TWRS projects.

In December 1998, the Secretary proposed closure of recommendation 92-4, Multi-Function Waste Tank Facility at the Hanford Tank Farms.

The Department completed 38 plan milestones, including all program management and site systems engineering commitments, in the original implementation plan and all milestones in revision 1 to the implementation plan. The final implementation plan deliverable was completed and provided to the Board in July 1998.

The 92-4 implementation plan required more than one year to complete due to the magnitude of applying systems engineering principles to projects at the Hanford Site. The Board has identified no additional activities it believes the Department needs to take in relation to the safety issues of this recommendation.

C. New Recommendation and Implementation Plans

In 2002, the Secretary accepted one new recommendation from the Board: recommendation 2002-1, *Quality Assurance for Safety-Related Software*, (2002-1). An implementation plan is currently being developed for this recommendation. The Department's target is to approve this plan by March 2003.

In 2002, the Department also received recommendation 2002-2 *Weapons Laboratory Support of the Defense Nuclear Complex*, (2002-2), and recommendation 2002-3, *Requirements for the Design, Implementation, and Maintenance of Administrative Controls*, (2003-3). The Secretary accepted 2002-2 in January 2003. An implementation plan is currently being developed for this recommendation. The Department's target is to approve this plan in April 2003.

The Secretary accepted 2002-3 in January 2003. The Department's target is to approve this plan in May 2003.

Recommendation 2002-1, Quality Assurance for Safety-Related Software

The Department expects to complete its implementation plan on Software Quality Assurance by March 2003.

On November 21, 2002, the Department accepted 2002-1 concerning the lack of substantial improvements in the quality assurance for safety-related software. The Department and its contractors use many codes to evaluate the consequences of potential accidents. Safety controls and their functional classifications are often based on these evaluations. The robustness and reliability of many structures, systems, and components throughout the Department's defense nuclear complex depend on the quality of the software used to analyze and to guide these decisions, the quality of the software used to design or develop controls, and proficiency in use of the software.

The recommendation identified areas where there is no substantial activity in development of new software for safety applications, resulting in new applications being based on existing codes, with data inputs and some logic chains often modified to fit problems of the moment. It is necessary to ensure that software so modified is not placed in general use in completion with generally validated and more widely useable software. The Board recommended that the Department take action to define responsibility and authority for software quality assurance (SQA), identify computer codes for safety analysis and design, establish requirements and guidance in the Department directives for a rigorous SQA process, and focus on the area of research and development.

The Department will issue an implementation plan under the leadership of the Assistant Secretary for Environment, Safety and Health. The implementation plan will include the following specific actions:

- Clear assignment of organizational roles, responsibility, and authority for safety-related software.
- Creation of an infrastructure necessary to ensure an effective software quality assurance program, including personnel with the appropriate skill and expertise.
- Implementation of processes to identify safety analyses and design codes and ensure that they are subject to verification and validation appropriate for the application.
- Establishment of requirements and guidance for a rigorous software quality assurance process, which will include the use of industry standards where practicable.
- Creation of a process that will be used to track continuous improvements in

software technology. This information will be used as a basis for maintaining safety-related software and will be shared across the complex.

This plan will build on the activities initiated by the Department to improve implementation of quality management systems at its defense nuclear facilities. Many of these activities resulted from the deficiencies documented in the Board's Technical Report DNFSB/TECH-25, *Quality Assurance for Safety-Related Software at Department Defense Nuclear Facilities*. The Department considers its efforts to improve software quality assurance as a key element in the overall improvement of its quality management system, and the implementation plan will include and build on the actions that have been undertaken by the Department. These actions focus on the weaknesses in the quality assurance program that affect safe operations of items serving vital safety functions and involve several initiatives to assure the effectiveness of quality assurance programs performing vital safety functions at the Department's defense nuclear facilities.

Recommendation 2002-2, Weapons Laboratory Support of the Defense Nuclear Complex

On January 8, 2003, the Department accepted 2002-2 regarding weapons laboratory support of the defense nuclear complex. An essential priority is for the Department to provide the defense nuclear complex with appropriate support. In addition, the Department recognizes that "one-size-fits-all" organizational structures and systems are not appropriate for our weapons laboratories.

The Department will issue an implementation plan that will include the following specific actions:

- An emphasis on the policy that the nuclear weapons program is the top priority among all activities at the weapons laboratories.
- Each weapons laboratory will review its existing processes for assigning individuals as the senior point of contact for each weapons system and ensure that selection criteria, training and mentoring, and succession planning are in place.
- The Department will ensure that the end result is that senior technically competent individuals are assigned as the point of contact for each weapons system.
- Each weapons laboratory will review its existing management system and demonstrate that through the appropriate alignment of a combination of internal organizational structure, programs, and procedures that the roles and responsibilities of each weapons point of contact are clearly defined.
- The point of contact for each weapon will be empowered to direct appropriate resources to ensure the safety of operations in the nuclear weapons complex within his/her assigned weapon system or have direct access to the management authority to acquire the necessary support.
- The Department will establish and staff a Federal function at each site office managing a weapons laboratory contract to ensure that the laboratory support requirements related to safety of operations of the defense nuclear weapons complex are being tracked and met. For this function, the NNSA reengineering will clarify the roles and responsibilities and the contractual lines of authority for providing direction and resolving competing requirements for resources.

The Department is preparing an implementation plan and expects it to be ready in April 2003.

The Department expects to complete its implementation plan on Weapons Laboratory Support of the Defense Nuclear Complex (2002-2) by April 2003.

2002-3, Requirements for the Design, Implementation, and Maintenance of Administrative Controls

On January 31, 2003, the Secretary accepted recommendation 2002-3 regarding the design, implementation, and maintenance of administrative controls. The Board's recommendation included two specific sub-recommendations:

1) The Department should promulgate a set of requirements for safety-class and safety-significant administrative controls to establish appropriate

The Department expects to complete its implementation plan on Administrative Controls (2002-3) by May 2003.

expectations for the design, implementation, and maintenance of these important safety controls.

2) The Department should ensure that existing administrative controls that serve the function of a safety-class or safety-significant control are evaluated against these new requirements and upgraded as necessary and appropriate to meet the Department's expectations.

The Department is developing an appropriate implementation plan describing how the identified issues will be resolved, and expects to issue this plan by May 2003.

D. Other Active Implementation Plans

Recommendation 2001-1, High-Level Waste Management at the Savannah River Site (SRS) (2001-1)

The Board issued 2001-1 on March 23, 2001. The recommendation addressed the margin of safety and maintenance of the amount of tank space in the SRS HLW system to enable timely stabilization of nuclear materials.

The Secretary accepted the recommendation and provided an initial implementation plan on May 18, 2001. The Board amplified its expectations for this recommendation in a May 24, 2001 letter to the Secretary. The Secretary approved and issued revision 1 to the 2001-1 implementation plan on September 14, 2001.

Commitment 2.6 of revision 1 called for the Department to develop and submit new commitments related to the implementation of the revised salt processing program. The Secretary approved and issued revision 2 to the 2001-1 implementation plan on May 10, 2002.

The Department has completed 69% of the action in its 2001-1 plan.

The Department made significant progress in 2002 in executing the 2001-1 implementation plan. A total of 18 of the 26 milestones in the plan are complete as of December 2002. Nine commitments were completed in 2002, and are highlighted as follows:

- Conduct an independent assessment of the HLW Performance Based Initiatives. The assessment report was completed on January 15, 2002. A copy of the assessment report was provided to the Board on January 29, 2002.
- Assess tank farm space management options and system vulnerabilities. The assessment was completed and approved by SR on January 29, 2002. The Department reported completion of this commitment and provided the assessment to the Board on February 13, 2002.
- Revise the SRS HLW tank inspection program. A revised in-service inspection plan for HLW tanks was provided to the Board on April 26, 2002. The Department committed to further revise the plan to include all 27 type III tanks and inspect them within ten years. The revised plan is expected to be provided to the Board in February 2003.
- Issue a report on HLW Tank Farm schedule sensitivity analysis. The analysis report was incorporated into the HLW System Plan, which was provided to the Board on April 26, 2002. The analysis demonstrates that early salt removal from either low curie salt disposition or salt processing provides for increased tank farm flexibility and earlier waste disposition.
- Issue a revised HLW System Plan. The revised HLW System Plan was provided to the Board on April 26, 2002.
- The Department briefed the Board on the status of 2001-1 activities on May 1, 2002.
- Develop and submit commitments related to implementation of the revised salt processing program. The Department provided revision 2 to the implementation plan to the Board on May 10, 2002. The revised plan established new commitments related to the salt processing program.
- Award engineering, procurement and construction contracts as a demonstration of progress towards acquisition of salt waste processing capability. On September 17, 2002, contracts were awarded to Parsons Infrastructure and Technology Group,

Inc. and Foster Wheeler USA Corporation for completion of conceptual designs for the Salt Waste Processing Facility. The Department reported completion of this commitment in a letter to the Board dated September 19, 2002.

- Assess the technical feasibility of dispositioning the current Tank 48 material and returning Tank 48 to HLW service. On October 21, 2002, the Department provided a report to the Board detailing options for returning Tank 48 to service.

In addition to the above completed commitments from the 2001-1 implementation plan, SRS completed the following actions to reduce the amount of tank waste at the site:

- Reduced over two million gallons of HLW inventory in underground storage tanks.
- Stabilized over 750,000 gallons of liquid waste in the Saltstone Facility
- Initiated draining of salt cake in preparation for salt dissolution activities under the Low Curie Salt disposal program.

As previously described, the 2001-1 implementation plan is taking more than one year to complete due to the associated assessments, construction, and project work required to fully meet the plan commitments. The Department estimates completion of all actions and milestones for this plan in 2004.

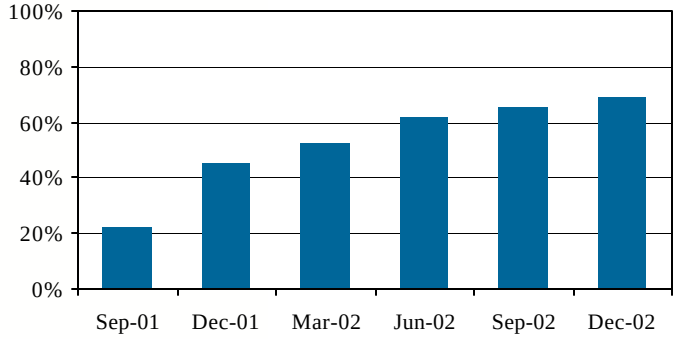
Recommendation 2000-2, Configuration Management, Vital Safety Systems (2000-2)

The Board issued 2000-2 on March 8, 2000. This recommendation addressed the Board's concerns that many of the Department's defense nuclear facilities, constructed years ago, were approaching the end of their design life, and that a combination of age-related degradation and deficient maintenance may affect the reliability and ability of the vital safety systems (VSS) to perform their safety functions as designed. Also of concern was the Department's capability to apply engineering expertise to maintain the configuration of these systems.

Specifically, the recommendation identified possible degradation in confinement ventilation systems and noted the Department's lack of designating system engineers for systems and processes that are vital to safety.

The Secretary accepted the recommendation on April 28, 2000. The Board amplified the intent of 2000-2 in a letter to the Secretary on September 8, 2000. The letter expanded the term vital safety system, as used within the 2000-2 implementation plan to include safety-class systems, safety-significant systems, and other systems that perform an important defense in depth safety function. The Secretary approved the 2000-2 implementation plan on October 31, 2000, and assigned the Principal Deputy Assistant Secretary for Environment, Safety & Health responsibility for leadership in plan implementation. Early in 2002, responsibility for implementation plan execution was reassigned to an Office Director in Environment, Safety & Health. Key accomplishments in implementing the plan during 2002 are as follows:

2001-1 Implementation Plan - Percentage Complete



- The Department completed phase I operability assessments of VSS including safety class, confinement ventilation, and fire protection systems at defense nuclear facilities. These assessments provided an initial evaluation of operational readiness of vital safety systems. The results of these assessments were analyzed in summary reports.
- The Department completed at least the first detailed assessments of operational readiness for VSS in key facilities at each defense nuclear site. These assessments were performed using the phase II criteria developed in 2001.
- The Department established contractor System Engineer Programs at the

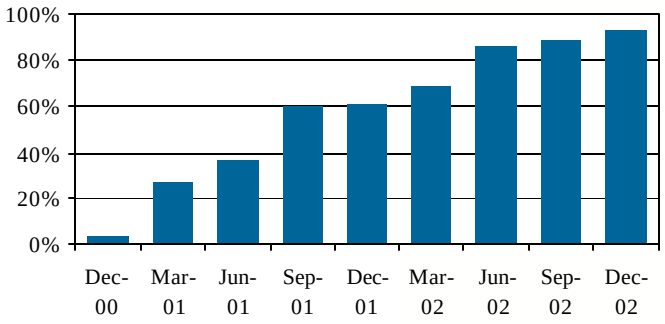
The Department has completed 93% of the actions in its 2000-2 implementation plan.

Department's defense nuclear facilities, designated contractor system engineers for VSS and began staffing and training for this function.

- The Department initiated an evaluation of high efficiency particulate air filter testing regimes and cost-effective sample sizes as an alternative to 100% testing of filters in safety applications at the Filter Test Facility.

- The Department reviewed ES&H assessments conducted during the 2001 calendar year to meet the requirement in DOE Notice 231.1, *Environment, Safety and Health Reporting.* Lead Program Secretarial Offices issued the second report of these assessments.

2000-2 Implementation Plan - Percentage Complete



- The Department issued a revision of DOE Order 420.1, *Facility Safety*, to incorporate the establishment of requirements for a system engineer concept to manage the configuration of systems designated as important to safety.

- The FTCP identified safety system expertise needed at the Federal level. The panel compiled needs for Federal personnel capable of reviewing safety systems and programs essential to systems operability, and plans of field offices to address critical technical skill gaps.

- The FTCP also initiated review and revision of TQP standards to incorporate safety system expertise at the Federal level.

As previously described, the 2000-2 implementation plan is a Department-wide effort that requires more than one year to execute and institutionalize due to the complex and widespread actions necessary to fully meet all commitments outlined in the plan. By the end of 2002, the Department had completed 40 of 43 (93%) commitments in the implementation plan. The remaining commitments deal with issuing a revision to the Nuclear Air Cleaning Handbook. Due to the large number of technical comments received on the draft handbook and the overall objective of a high quality technical product, the Department notified the Board that issuance of the revised handbook is expected in June 2003 instead of November 2002. Completion of all actions and commitments for the 2000-2 implementation plan and a proposal to close the recommendation is expected to occur in 2003.

Recommendation 2000-1, Stabilization and Storage of Nuclear Material

The Board issued 2000-1, on January 14, 2000. The recommendation addressed the urgency of completing nuclear material stabilization activities that the Department previously agreed to under the implementation plan for 94-1. Recommendation 2000-1 calls for an accelerated schedule for stabilizing and repackaging high risk, unstable special nuclear materials, spent fuel, unstable solid plutonium residues, and highly radioactive liquids that pose potential safety concerns for the public, workers, and environment.

On March 13, 2000, the Secretary accepted nine of the sub-recommendations dealing specifically with the technical aspects of the Department's material stabilization plans, but did not accept the two sub-recommendations directed at the funding requirements. The Secretary approved the implementation plan on June 8, 2000, and assigned implementation leadership to EM's Deputy Assistant Secretary for Integration and Disposition. On July14, 2000, the Board accepted the implementation plan for stabilization activities at the Hanford Site, Rocky Flats Environmental Technology Site (RFETS), Lawrence Livermore National Laboratory (LLNL), and Oak Ridge National Laboratory (ORNL). The Board expressed concern with regard to plans at Los Alamos National Laboratory (LANL) and certain material types at the SRS. The Board encouraged the Department to accelerate remediation and stabilization activities at these sites.

Revision 1 of the 2000-1 implementation plan was provided to the Board on January 19, 2001, to reflect changes in the schedule

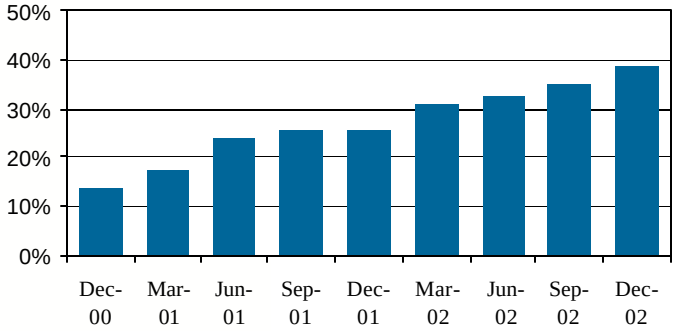
for stabilization activities at LANL as outlined in the June 2000 plan and consistent with the Board's July 2000 letter. On July 22, 2002, the Secretary approved the revision 2 of the 2000-1 implementation plan that incorporates improved schedule for stabilization activities at LANL and SRS as well as several previously approved milestone changes. It further designated the Chief Operating Officer in the EM as the Responsible Manager (RM) for activities in EM sites and the Deputy Administrator for Defense Program in the NNSA as the RM for activities at LANL and LLNL. In an August 9, 2002 letter, the Board accepted the revised plans and schedule for SRS.

The key accomplishments in accordance with implementing and institutionalizing the Department's 2000-1 implementation plan during 2002 are as follows:

- Began processing H-Canyon plutonium solutions through the HB-Line converting the solution to oxide at SRS in January 2002.
- Completed the repackaging of all low-risk residues at RFETS in May 2002.
  - Completed stabilization and packaging plutonium solutions at the Hanford Site in July 2002.
- Completed the processing of the H-Canyon plutonium solutions, approximately 34,000 liters (9,000 gallons), through conversion to oxide using HB-Line and by transferring a substantial fraction to the HLW system for vitrification in the DWPF at SRS in July 2002 (five months early).
  - Began conversion of plutonium solutions from residues to oxide using HB-Line at SRS in September 2002 (four months early).
  - Began fuel removal from the K-East Basin and transport to K-West Basin at the Hanford Site in November 2002.
  - Completed packaging the remainder of alloys to meet DOE-STD-3013 criteria at the Hanford Site in December 2002.

The 2000-1 implementation plan requires more than one year to complete due to the technical complexity and diversity of material requiring stabilization at affected defense nuclear sites. The Department estimates completion of all actions and milestones for the 2000-1 implementation plan in the year 2010.

2000-1 Implementation Plan - Percentage Complete



Recommendation 99-1, Safe Storage of Fissionable Material Called "Pits" (99-1)

The Board issued 99-1 on August 11, 1999. The recommendation addressed issues associated with ensuring the long-term safety of pits, either those held for potential future national security purposes or those identified as surplus to national security needs.

The Secretary accepted 99-1 on October 12, 1999. The Secretary approved the implementation plan on February 1, 2000, and assigned implementation leadership to the Assistant Deputy Administrator for Military Application and Stockpile Operations in NNSA's Office of Defense Programs.

On March 18, 2002, the Department proposed a revision to one of the commitments in the implementation plan. This revision satisfied the Department's objective of accomplishing an acceleration of the pit-repackaging rate through process improvements and operational efficiencies without two shifts.

The Department has made significant progress towards the completion of the milestones identified in the implementation plan. The key accomplishments in accordance with implementing and institutionalizing the Department's 99-1 implementation plan during 2002 are:

- Reduced long-term risks by repackaging 2,400 pits during fiscal year 2002.

- Conducted surveillance on 143 storage containers during fiscal year 2002 to ensure the continued integrity of these containers, thereby, successfully eliminating the container surveillance backlog.

- Delivered the AL-R8 Sealed Insert Pit Repackaging Report for first quarter of fiscal year 2002 to the Board. As of May 8, 2002, the Department is no longer required to provide the quarterly pit repackaging reports to the Board.

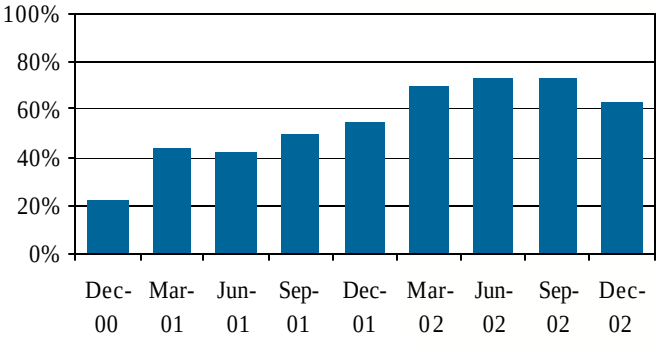
The 99-1 implementation plan has required more than one year to complete due to the magnitude of the effort. Pit repackaging is proceeding as planned. The Department anticipates proposing closure of this recommendation in 2003.

Recommendation 98-2, Safety Management at the Pantex Plant (98-2)

The Board issued 98-2, September 30, 1998. The recommendation addressed the need to accelerate safety improvements for nuclear explosive operations at the Pantex Plant. Recommendation 98-2 represents a combination of issues raised in prior Board recommendations and staff observations of Pantex activities.

The Secretary accepted 98-2 on November 20, 1998. The Secretary approved the implementation plan and provided it to the Board on April 22, 1999. Leadership for implementation was assigned to the Deputy Assistant Secretary for Military Application and Stockpile Management (now the Assistant Deputy Administrator for Military Applications and Stockpile Management).

98-2 Implementation Plan - Percentage Complete



The implementation plan was revised and provided to the Board on September 25, 2000. Revision 1 introduced a fundamental change in the Department's approach by increasing the focus and priority in making safety improvements applicable to multiple nuclear weapon processes. The Department continues to apply the concepts of Seamless Safety for the 21st Century (SS-21) to individual weapon processes in accordance with the schedules established. However, the Department believes major safety improvements can be gained by focusing on improved engineered controls applicable to multiple weapon programs and processes. Thus, the Department can achieve tangible improvements in safety on a near-term basis, allowing weapon project teams to focus on further eliminating or reducing hazards through process redesign, as required.

On October 25, 2002, the Department provided the Board with change 1 to revision 1 of the implementation plan. This change updated the dates of several remaining commitments and added a new commitment to accelerate SS-21 tooling for the W78 and W88 weapon systems.

The Department continues to take active steps to complete the milestones in the 98-2 implementation plan. Twenty of twenty-eight milestones have been met. The key accomplishments during 2002 are as follows:

- Developing and approving 10 CFR 830 compliant site-wide controls for intra-site transportation of fully assembled weapons.

- Analyzing the impact of and implementing Albuquerque Operations Office (AL) Supplemental Directives 452.1 and 452.2, dealing with nuclear safety policy and nuclear explosive safety study groups.

- Issuing Nevada Operations Office (NV) Supplemental Directive 452.1B, Nuclear Explosive and Weapon Surety Program.

- Developing and approving 10 CFR 830 compliant site-wide controls for fire hazards to nuclear explosive operations.

- Upgrading the fire suppression system for five nuclear explosive assembly/ disassembly cells, including installation of infrared fire detectors and improved deluge fire suppression.

- Sustaining a multi-year effort to replace the aging and obsolete Pantex Alarm System.
- Sustaining progress toward on time completion of the W78 SS-21 project.
- Initiating the B83 SS-21 project on schedule and sustained progress to complete on time per the commitment to the Board.

The 98-2 implementation plan requires more than one year to complete due to the magnitude and complexity of the changes. The critical path to completion of all commitments of the implementation plan is governed by the time to re-engineer the W78 and B83 nuclear explosive operations to SS-21 standards. The Department currently estimates completion of all actions and milestones for the 98-2 implementation plan in 2004.

Recommendation 97-2 , Criticality Safety (97-2)

The Board issued 97-2 on May 19, 1997. This recommendation outlined the Board's vision for a robust criticality safety infrastructure within the Department and suggested specific actions necessary to achieve this vision. The specific actions would start with the foundation established by the Department in response to the Board's recommendation 93-2, *The Need for Critical Experiment Capability*. In addition, 97-2 raised issues related to assuring that criticality safety is effectively and efficiently addressed in current and future operations.

The Department accepted the recommendation on July 14, 1997. The Secretary approved the 97-2 implementation plan and provided it to the Board on December 12, 1997. Implementation leadership was assigned to the Assistant Secretary for Defense Programs. The Department began executing the plan in January 1998 by formally establishing the Nuclear Criticality Safety Program (NCSP). The NCSP includes seven program elements:

- Integral Experiments;
- Benchmarking;
- Analytical Methods Development and Code Maintenance;
- Nuclear Data;
- Training and Qualification;
- Information Preservation and Dissemination; and
- Applicable Ranges of Bounding Curves and Data.

Each program element is dependent upon the others for a successful program.

As of April 2001, the Department has completed all 30 of the milestones in the 97-2 as implementation plan. Although all plan milestones are complete, stability of funding for the NCSP has been an ongoing concern. During the past year, the Department has made substantial progress in addressing this issue. NNSA has decided to fully fund and manage the NCSP for fiscal year 2003 and beyond. This is a significant departure from the shared funding approach that has been used with limited success over the past few years. The NCSP and its funding requirements have been defined in the Readiness in Technical Base and Facilities portion of the NNSA's annual budget request. This new approach will provide better overall program management and a reasonable degree of funding stability necessary for the eventual closure of 97-2.

The key accomplishments in implementing and institutionalizing the Department's 97-2 implementation plan during 2002 are:

- The NCSP Manager, with support from the Criticality Safety Support Group, reviewed the NCSP in detail, validated the program requirements, and updated the Five-Year Program Plan to reflect baseline funding requirements.
- The Criticality Safety Support Group conducted technical reviews of several operational criticality safety issues at the request of field elements and also provided input to EH on criticality safety policy and standards issues.
- The Department continued training efforts through the NCSP. Several new Nuclear Criticality Safety Engineer Training modules were developed and placed on the NCSP Web Site at LLNL and hands-on criticality safety training continued at the LANL.

The Department has completed all milestones in the 97-2 Implementation Plan.

- A Nuclear Data Advisory Group was formed to integrate integral and differential data acquisition and evaluation and expedite publication of new differential data through the Cross Section Evaluation Working Group process.

Implementation of 97-2 required more than one year to complete due to the magnitude and scope of the actions and the time required to demonstrate stability of funding for the NCSP. The Department expects to demonstrate stability of funding and propose closure of 97-2 during 2003.

Recommendation 97-1, Safe Storage of Uranium-233 (97-1)

The Department has completed all milestones in the 97-1 Implementation Plan.

The Board issued 97-1, on March 3, 1997. The recommendation addressed safety issues for storing the existing inventories of unirradiated uranium-233 bearing materials. The Department accepted the recommendation on April 25, 1997. The Secretary approved the implementation plan and provided it to the Board on September 29, 1997. The Secretary assigned leadership of plan implementation to a Task Team reporting to the Department's Assistant Secretaries for Defense Programs and Environmental Management.

The Department has an inventory of approximately two metric tons of uranium-233 in many different chemical and physical forms, and stored under a variety of conditions throughout the complex. The largest quantities are located at ORNL and the Idaho National Engineering and Environmental Laboratory (INEEL), with lesser quantities at LANL. Smaller quantities exist at numerous other sites. Some of the uranium-233 bearing material is managed under the Department's National SNF Program.

The Department has completed all milestones in its 97-1 implementation plan as of July 1999. The last milestone, which was the development of the Program Execution Plan (PEP), was completed in July 1999 and documents the Department's plans to continue the efforts under the uranium-233 safe storage program.

In November 2001, the Department released a draft request for proposal (RFP) for a private contract to extract thorium from the uranium-233 material at ORNL for medical use. Issuance of a final RFP was later placed on hold pending submission of a detailed project plan to Congress. The Department provided this plan in March 2002.

The key accomplishments in accordance with institutionalizing the Department's 97-1 implementation plan during 2002 are as follows:

- In June 2002, the Department issued RFP No. DE-RP05-00OR22860, "Uranium-233 Disposition Medical Isotope Production, and Building 3019 Complex Shutdown" for a three-phased project to process the uranium-233 in Building 3019 to eliminate criticality and proliferation concerns through down blending, to extract thorium-229, and to remove the uranium-233 so that the 3019 Complex can be deactivated. Proposals were received on September 23, 2002 and are in the process of being evaluated. Contract award is anticipated in late Spring 2003. The three project phases are: 1) Phase I, Planning and Design 2) Phase II, Project Implementation and 3) Phase III, Building 3019 Complex Shutdown.

- The Department continued retrieving and inspecting packages containing uranium-233 material from storage tube vaults in Oak Ridge Building 3019. As of mid-December 2002, a total of 49 containers have been inspected (42 from the 3019 storage vaults plus 7 containers of uranium-233 received from LLNL). Twenty different container (package) types were nondestructively inspected representing over 75% of the inventory. No corrosion or evidence of any leakage from any of the outer packages has been observed.

- The special inspection equipment, tooling and procedures developed for the inspection program have been effective in confirming the integrity of the containers of uranium-233 stored in the Oak Ridge Building 3019. To date, only one tin-plated steel inner container containing ammonium diuranate (ADU) indicated significant corrosion during destructive inspections. The observed corrosion is

believed to be the result of the ADU material being in direct contact with tin-plated steel. The ADU material was subsequently converted to uranium oxide, and the oxide repackaged in new stainless steel inner and outer containers for storage in the 3019 tube vaults. Review of the inventory did not disclose any other packages with this material combination.

- At INEEL, actions to ensure response to the recommendation continued. The inspections conducted to monitor the storage vaults were integrated with the normal operations of the storage facility. These inspections did not reveal any discrepancies in the storage of the material.

- At INEEL, actions were completed to upgrade the environmental seals on the storage vaults and maintenance activities including grouting and painting the exterior of the vaults. An upgrade to the cathodic protection system for the storage vaults was completed in 2002.

A report entitled "The Safe Storage of Uranium-233 Material at the INEEL" was completed (issue pending) documenting the safe storage condition of the uranium-233 material at the INEEL that has been inspected.

The 97-1 implementation plan has required more than one year to execute due to complexity of the actions. All milestones in the plan have been met as of July 1999. The Department anticipated that closure of the recommendation would be proposed in 2002. However, due to delays associated with the recent initiative to extract thorium from the uranium-233 material at ORNL, the Department now expects to propose closure in 2003.

Recommendation 95-2, Integrated Safety Management (95-2)

Recommendation 95-2 called for: 1) an institutionalization process for ensuring environment, safety, and health requirements are met; 2) graded safety management plans for the 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 implement the streamlined process effectively.

The Secretary accepted the recommendation on January 17, 1996. The Secretary approved the implementation plan and provided it to the Board on April 18, 1996. Leadership was assigned to the Under Secretary of Energy, who created a Safety Management Implementation Team to implement the plan. The Department's 95-2 implementation plan describes the Department's approach for implementing these recommendations. The Department completed all implementation plan commitments between 1996 and 1998.

ISM remains the Department's central framework for completing work while protecting the public, the workers, and the environment. Consideration and protection from safety hazards is built right into the work processes. Field offices and contractors strongly support this approach to doing work and want ISM to be an enduring program. Key activities to maintain and sustain ISM programs during 2002 are summarized below:

The Department has completed all milestones in the 95-2 Implementation Plan.

- In February 2002, OA established in October 2001, developed and approved its FRA, which delineates safety management roles and responsibilities within the OA organization.

- In May 2002, the Department held a two-day forum on initiatives designed to take ISM implementation "to the next level" in efficient, effective, and complete integration of safety into the diverse set of Department missions, projects, and activities.

- In August 2002, the Department held a two-day workshop on maintaining and improving established Integrated Safety Management Systems (ISMS). Workshop participants shared best practices and lessons learned, and identified specific recommendations to improve the Department's directives and guidance on ISMS maintenance.

- In December 2002, the Department held a two-day Executive Safety Conference with over 200 Department and contractor executives to discuss improvements in implementing safety

management and to take the ISM program to the next level.

- In December 2002, EH developed and approved its FRA document, which delineates safety management roles and responsibilities within the EH organization.

The Department has completed development and initial implementation of ISM. The ISM program has been institutionalized, and is now in sustenance/maintenance phase, where continuous improvement is expected. As reported in the 1996 Annual Report to Congress, the Department's 95-2 implementation plan required more than one year to implement due to the magnitude of the fundamental changes involved in the Department's approach to safety management. ISMS are now in place throughout the defense nuclear complex. This recommendation is fully implemented and is ready for closure. Closure of this recommendation would demonstrate support for the ISM fundamental principle that "line management is responsible for safety."

E. Report on Implementation Plans Requiring More Than One Year

When Congress established the Board, they envisioned that the Department would typically be able to resolve Board recommendations within a relatively short period of time, such as within one year after the Department submits the associated implementation plan. To monitor the Department's performance in completing implementation plans, Congress included a provision in the Board's enabling legislation that requires the Department to notify Congress whenever the Department requires more than one year to complete a recommendation implementation plan. The enabling legislation also requires the reasons for requiring more than one year and the expected completion date.

The Department has required more than one year to complete most of recommendation implementation plans. This has occurred for a variety of reasons including the size and scope of issues being addressed and challenges in accomplishing complex-wide changes. The Department routinely makes the required Congressional notification in conjunction with the Department's Annual Report to Congress on Board activities (i.e., this report), which is also required by the Board's enabling legislation. In accordance with Chapter 21, Section 315 of the Atomic Energy Act of 1954 [42 U.S.C. § 2286d (f)(1)], the following active implementation plans are expected to require or have already required more than one year to complete:

- 92-4, Multi-Function Waste Tank Facility at Hanford[1]
- 94-1, Improved Schedule for Remediation[1]
- 95-2, Safety Management[1]
- 97-1, Safe Storage of Uranium-233[1]
- 97-2, Criticality Safety[1]
- 98-1, Resolution of Internal Oversight Findings[1]
- 98-2, Safety Management at the Pantex Plant[1]
- 99-1, Safe Storage of Pits at the Pantex Plant[1]
- 2000-1, Stabilization and Storage of Nuclear Material[1]
- 2000-2, Configuration Management, Vital Safety Systems [1]
- 2001-1, High-Level Waste Management at the Savannah River Site[1]

[1] Previously reported to require more than one year to implement.

F. Categorization of Board Recommendations

There are several ways to categorize Board recommendations. These categories provide insight into the types of safety issues the Department is addressing and the schedules for issue resolution. The main categories are as follows:

- scope of organizations involved;
- lead implementation organization; and
- progress towards completion of implementations.

Scope of Organizations Involved

Recommendations vary in the scope of organizations involved and are categorized as:

- Department-wide;
- multiple-sites/multiple-organizations; and
- single-site/single-organization.

In general, the more organizations that are involved in executing a recommendation implementation plan, the more complex and time-consuming the resolution is. Department-wide recommendations are most likely to involve complex management and coordination efforts, which lengthen the time required for implementation and institutionalization. In addition, Department-wide recommendations are more likely to involve management culture changes, which require more time and attention to assimilate. Single-site recommendations are often of a more technical nature, which require less time for implementation. However, when extensive research, development, construction, and project work are required to resolve safety issues at single sites, implementation time is lengthened. Complex-wide recommendations often involve management issues and also often require cultural and process changes. Implementation of these recommendations may require more time due to the complexity of the changes. Tables 3.A - 3.C show the scope of organizations involved for open Board recommendations and recommendations closed over the past three years.

Table 3.A - Department-Wide Recommendations

Open Recommendations	Closed Recommendations (1999-2002)
2002-3, Requirements for the Design, Implementation, and Maintenance of Administrative Controls	94-5, Rules, Orders, and Other Requirements
2002-1, Software Quality Assurance	94-2, Safety Standards for Low Level Waste
2000-2, Configuration Management, Safety Systems	93-3, Improved Technical Capability
2000-1, Stabilization and Storage of Nuclear Material	
98-1, Resolution of Safety Issues Identified by Internal Independent Oversight	
95-2, Safety Management	
94-1, Improved Schedule for Remediation	

Table 3.B - Multiple-Site/Multiple-Organization Recommendations

Open Recommendations	Closed Recommendations (1999-2002)
2002-2, Weapons Laboratory Support of the Defense Nuclear Complex	93-6, Maintaining Access to Nuclear Weapons Expertise
97-2, Criticality Safety	93-1, Standards Utilization at Defense Nuclear Programs
97-1, Safe Storage of Uranium-233	

Table 3.C - Single-Site/Single-Organization Recommendations

Open Recommendations	Closed Recommendations (1999-2002)
2001-1, High-Level Waste Management at the SRS	96-1, In-Tank Precipitation Facility (SR)
99-1, Safe Storage of Pits at the Pantex Plant	95-1, Improved Safety of Cylinders Containing Depleted Uranium (OR)
98-2, Safety Management at the Pantex Plant	94-4, Deficiencies in Criticality Safety at Oak Ridge Y-12
92-4, Multi-Function Waste Tank Facility at Hanford	94-3, Rocky Flats Seismic and Safety Systems
	93-5, Hanford Waste Tanks Characterization

Lead Implementing Organizations

Most Department implementation plans are managed from Department Headquarters organizations. Tables 3.D, 3.E, and 3.F show the lead organization for open recommendations managed from Department headquarters.

Table 3.D - Lead Organization: Environmental Management

Open Recommendations
2001-1, High-Level Waste Management at the Savannah River Site
2000-1, Stabilization and Storage of Nuclear Material
97-1, Safe Storage of Uranium-233
94-1, Improved Schedule for Remediation
92-4, Multi-Function Waste Tank Facility at Hanford

Table 3.E - Lead Organization: National Nuclear Security Administration

Open Recommendations
2002-2, Weapons Laboratory Support of the Defense Nuclear Complexes
99-1, Safe Storage of Pits at the Pantex Plant
98-2, Safety Management at the Pantex Plant
97-2, Criticality Safety

Table 3.F - Lead Organization: Environment, Safety, and Health

Open Recommendations
2002-3, Requirements for the Design, Implementation, and Maintenance of Administrative Controls
2002-1, Software Quality Assurance
2000-2, Configuration Management, Vital Safety Systems
98-1, Resolution of Safety Issues Identified by Internal Independent Oversight
95-2, Safety Management

Table 3.G - Implementation Plans with all Commitments Complete

Open Recommendations
99-1, Safe Storage of Pits at the Pantex Plant
98-1, Resolution of Safety Issues Identified by Internal Independent Oversight
97-2, Criticality Safety
97-1, Safe Storage of Uranium-233
95-2, Safety Management
94-1, Improved Schedule for Remediation (all open commitments are being managed under 2000-1 implementation plan.)
92-4, Multi-Function Waste Tank Facility at Hanford

Table 3.H - Implementation Plans with Projected Completion Dates in 2003

Open Recommendations
2000-2, Configuration Management, Vital Safety Systems

Table 3.I - Implementation Plans With Projected Completion Dates After 2003

Open Recommendations (Projected Completion)
2002-3, Requirements for the Design, Implementation, and Maintenance of Administrative Controls (TBD)
2002-2, Weapons Laboratory Support of the Defense Nuclear Complexes (TBD)
2002-1, Software Quality Assurance (TBD)
2001-1, High-Level Waste Management at the Savannah River Site (2004)
2000-1, Stabilization and Storage of Nuclear Material (2010)
98-2, Safety Management at the Pantex Plant (2004)

Progress Toward Completion of Implementation Plans

Implementation plans with long-term completion schedules involve more uncertainty than those with shorter completion schedules. The long-term plans often involve research, development, and application of new techniques. Due to the nature of these activities, the schedules are less certain and the basic direction of the plan may need to be substantially changed based on the outcome of intermediate activities. For plans to be effective and useful, it must be understood that plan deliverables and milestones cannot be known with certainty several years in advance and should not be held rigid in light of new information and new priorities. Flexibility is required in adjusting plan deliverables and milestones as the plan is being executed, particularly for plans that extend more than the one year that Congress envisioned for typical implementation plan completion. Table 3.G, 3.H, and 3.I show the status of implementation plans based on anticipated completion dates.

IV. Safety Accomplishments and Activities at Major Defense Nuclear Sites

A. Albuquerque Service Center (AL)

In December 2002, NNSA announced changes in it organization structure. The new structure changed the role of the Albuquerque office from management to service of various NNSA site offices, including Los Alamos, Sandia, and Pantex. For this report, safety activities are combined, as this was the organizational configuration for most of 2002. The AL office supported the site offices in leading and performing the following assessments during 2002:

- Fire Protection Yard Main Replacement Project Fire Loop Readiness Assessment at the LANL;
- Sandia Pulsed Reactor Facility Critical Experiments Readiness Assessment at the Sandia National Laboratory (SNL);
- Dual Axis Radiographic Hydrodynamic Test Facility Axis-2 Injector High Potential Conditioning Activity Readiness Assessment at LANL;
- Octave Experimental Tests Weapons Engineering Test Facility Readiness Assessment at LANL;
- Decontamination and Volume Reduction System Readiness Assessment at LANL;
- TA-8-23 Radiography Facility Readiness Assessment at LANL; and
- Ventilation System VSS Phase II Assessment at LANL.

AL Safety Bases Activities

The AL site offices made significant progress toward meeting the safety basis upgrade deadline of April 2003 specified in 10 CFR 830, Subpart B. The Safety Basis Information System database was maintained current as safety basis documents were approved and updated. AL divisions supported the site offices in reviewing and approving safety basis documents and maintaining the Safety Basis Information System database.

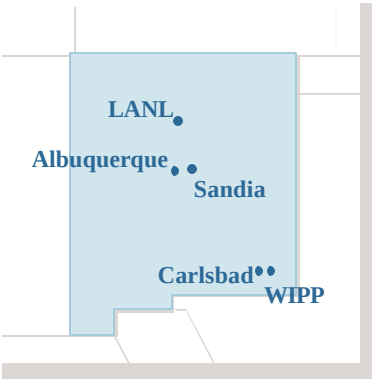
DOE Corrective Action Tracking System

The AL office, including its site offices and contractors, have identified 704 of 785 corrective actions since the implementation of CATS in response to 98-1. One hundred twenty-four corrective actions were identified as complete in 2002.

Federal staff reviewed and completed CAPs provided in response to OA assessments and Type A accident investigations. These reviews identify whether proposed actions are acceptable and have had the desired effect of eliminating the deficiencies in Department and contractor operations when completed. These assessments will continue as part of the implementation of the Department's CATS program.

Los Alamos Site Office (LASO)

- On December 17, 2002, the Department issued the ROD for the Final EIS for the Proposed Relocation of TA-18 Capabilities and Materials at LANL (TA-18 Relocation EIS). Based on information in the EIS and other factors such as programmatic and technical risk, NNSA decided to relocate TA-18 Security Category I/II missions and related materials to the Device Assembly Facility at the NTS.
- In a cooperative effort with the Carlsbad Field Office (CBFO), LASO and LANL moved forward in an effort to transfer high activity/high risk TRU Waste drums staged at TA-54 at LANL to the WIPP. Drums identified for transfer contribute 60% of the off-site dose to the public from accident scenarios. "Quick to WIPP" is a two year project (subject to concerns of delay related to continuing resolutions). This effort complements efforts in risk reduction through material stabilization (94-1).
- AL charted the Senior Safety Advisory Council to assist site managers in safety reviews. The council is composed of the Senior Safety Advisors from the Albuquerque Support Center and the Kirtland, Los Alamos and Pantex sites. The council



DOE Offices in New Mexico

Transuranic waste or "TRU waste" consists of materials resulting from the research and production of nuclear weapons. Most waste that is coming to the WIPP consists of rags, clothing, tools and other such items contaminated with radioactive elements, mostly plutonium.

The Department continued to reduce risks by repackaging 2,400 pits into AL-R8 Sealed Inserts at Pantex in fiscal year 2002.

participated in reviews to include lightning protection, safety of accelerated aging units and reviews of site responses to Board inquiries.

- LASO/LANL conducted detailed reviews in support of 2000-2, Review of VSS. The reviews revealed several areas for improvement that led to corrective actions in areas of fire protection and design/operation of ventilation systems. Reviews also verified adequacy of other VSS.

- LANL completed a revision of their ISM Description Document that incorporates information and experience gained during the implementation of ISM at Los Alamos.

LASO and LANL partnered in the following:

- implementation of guidance to improve the quality of safety basis documents; and

- review of manpower requirements to support the development, review and approval of safety basis documents that provided for the submittal and approval of documentation of over 70% of LANL nuclear facilities, on target for compliance with the April 2003 deadlines.

Sandia Site Office (SSO)

SSO developed an "Authorization Basis Review and Approval" procedure. This procedure provides guidance and expectations for the review of SNL documented safety analyses. The procedure also includes a checklist that guides the review of documented safety analyses. The procedure is intended to be used by SSO personnel but has been shared with SNL so that they are aware of SSO's expectations.

Pantex Site Office

- The Department made significant progress toward meeting the 10 CFR 830 Subpart B requirements for establishing Documented Safety Analysis (DSA) at Pantex.

- OA completed an ES&H review at Pantex October 28 – November 8, 2002. The review focused on ISMS and other functional areas. The review team was very positive about the majority of the Pantex Site Office and Bechtel BWXT activities.

ISM - The Pantex Plant ISM system was initially verified in November 2000. In October 2002, the Pantex Site Office issued an update to their ISMS description. Additionally, in December 2002, the Pantex Site Office approved the annual update to the contractor ISMS description.

The Pantex Site Office worked with Headquarters and the Board's staff to change Revision 1 to the 98-2 implementation plan. The change was approved by the Secretary and forwarded to the Board on October 28, 2002. The Pantex Site Office is currently assessing implementation of site-wide fire and transportation controls and will provide the results as part of 98-2 commitments.

BWXT has supported timely completion of 2002-2 commitments. Specifically, they completed all phase I assessments and two phase II assessments. Although it was not required by the implementation plan, the site did a phase II assessment of the Pit Storage/Staging Thermal Monitoring System to better characterize the system.

The Department made significant progress toward meeting the 10 CFR 830 Subpart B requirements for establishing DSAs at Pantex. The Integrated Weapons Activity Plan schedule deliverables remained on track for the fiscal year. The only change to the Integrated Weapons Activity Plan was due to scope issues outside of Pantex's control (W62 extra significant finding investigation units and W88 potting process).

B. Carlsbad Field Office (CBFO)

WIPP is a non-reactor nuclear facility providing safe and permanent disposal of defense TRU waste in subterranean salt beds 2,150 ft beneath the desert of southeastern New Mexico. Since the opening for TRU waste disposal in 1999, WIPP has played a crucial role in helping DOE meet its commitments to environmental cleanup around the nation. WIPP has been successful in integrating safety into programmatic mission, as demonstrated by safe characterization, transportation and disposal of TRU waste.

The following are examples of WIPP safety accomplishments:

- The WIPP safety culture has achieved high-level recognition under the Department Voluntary Protection Program (VPP). In 2002, WIPP received its three-year recertification as a VPP STAR site. WIPP also received the VPP "Superior Star" Award for keeping its recordable incident rate below 50% of the industry average.
- During 2002, WIPP received the 16th consecutive Mine Operator of the Year award from the New Mexico Mining Association, along with the Certificate of Merit and the Safety Excellence Award from the New Mexico Inspector of Mines. The Certificate of Merit recognizes WIPP's underground operations for "superior performance in promoting safety in the mining industry" by achieving a zero accident rate.
- WIPP continues to enhance safety and productivity through implementation of the ISMS. The OA conducted an independent inspection of WIPP ES&H and emergency management programs in 2002. The OA inspection report concluded that "the overall effective ISM program has resulted in an excellent safety record at WIPP."
- WIPP completed phase I and phase II assessments of VSS in support of 2000-2. Continuous assurance of operability of WIPP safety systems is institutionalized through the implementation of a system engineers program, a configuration management program, operating procedures, and management assessments.
- WIPP successfully completed a Performance Dry Run (PDR) of the Remote-Handled (RH) TRU Waste Handling Processes for the proposed RH Program using both 72B and 10-160B shipping casks. Representatives from the Board, Environmental Evaluation Group and the French waste management agency - ANDRA - observed the PDR.

C. Idaho Operations Office (ID)

ID has met all commitments to the Board that are required by the 2000-2 implementation plan. These included identifying all VSS at INEEL defense nuclear facilities and completing phase I assessments of these systems, i.e., high-level reviews of configuration management, current functional capability, upkeep and maintenance, and adequate representation in the Safety Analysis Report or Operating License. Once the phase I assessments were completed, the results were analyzed to determine what facilities would receive phase II assessments.

The phase II assessments noted that there were areas that needed improvement, such as configuration management and maintenance of the VSS. Because areas for improvement were found, INEEL performed an additional phase II assessment of the Idaho Nuclear Technology and Engineering Center (INTEC) Tank Farms. This assessment was completed in May 2002. There was significant improvement noted in the contractor's performance when compared to the previous assessments. Additionally, phase II assessments have been institutionalized by adding scope to the contractor-run (Department evaluated) Facility Evaluation Boards, as well as in the ID assessment schedule.

Commitments 14 through 19 of the 2000-2 implementation plan discuss the use of "System Engineers" in defense nuclear facilities. The concept of a system engineer is that an individual is assigned to a VSS and given the responsibility to ensure that all requirements for configuration management, maintenance, and safety analysis are met. Bechtel BWXT Idaho, LLC has established and implemented the System Engineer Program for the INEEL. ID has established the System Subject Matter Expert (SME) qualification for federal employees and facility specific Technical Qualification cards have been modified to incorporate the additional requirements.

D. Nevada Site Office (NV)

During 2002, NV was proactive in enhancing NV's safety initiatives. NV resolved issues identified by the Board in formal recommendations and correspondence, staff reports regarding the

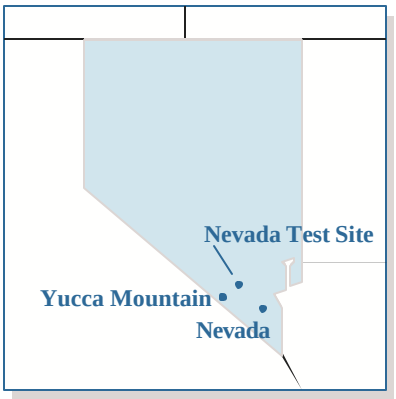
In 2002, WIPP received, handled, and disposed of 5,137 m^3 of TRU waste with an excellent safety record. Operational throughput increased from 10 to 25 shipments per week with a 70% improvement in TRUPACT-II processing time and a low recordable injury/ incident rate of 1.45. WIPP staff has achieved over 2,000,000 work hours (22 months) without a day away from work.

status of facilities, as well as through on-site discussions and briefings. NV responded to approximately 100 Board requests, which required a significant amount of coordination among NV's employees, contractors, and National Laboratories.

NV's contractor developed, and is currently implementing, a Nuclear Operations Implementation Plan to ensure formal and disciplined operations, safety management programs, and performance documents of Hazard Category 2 and 3 Non-reactor Nuclear Facilities. A new Work Smart Standard, work activity 2.X, Hazard Category 2 & 3 Non-reactor Nuclear Facilities has been approved. NV's contractor has hired a Senior Manager to lead this effort, and a Safety Basis Engineering Manager to support the Nuclear Operations implementation. The effort includes developing an enhanced infrastructure to support nuclear operations, including training, system engineering, and maintenance programs. A new Facility Manager and Facility Owner (FM/FO) Program is being implemented which will transition to a new organizational relationship. Operations Manager selected FM/FOs are trained and qualified in accordance with the new FM/FO Qualification Program.

In addition, NV and NNSA/HQ developed an independent team of Nuclear Safety professionals to perform a comprehensive review of how NV is fulfilling its responsibilities with regard to nuclear safety and operations. The assessment team provided a report that contained 24 recommendations in 4 functional areas. The assessment team review focused on NV processes for oversight of nuclear facilities/operations and hazardous nonnuclear facilities. NV has accepted the team's recommendations and has incorporated them into an implementation plan. NV has currently resolved 50% of the team's recommendations.

NV is committed to continuously improving our ISM processes and culture. The NV Integrated Safety Management Council (comprised of senior members from each organization working at the NTS) regularly reviews ISM implementation status across the NV complex. Consistent with NV's ISM commitment, contractors performed 59 assessments during fiscal year 2002. A comparison of independent ISM assessments shows improved compliance with ISM. As an example, a specific group of facilities was assessed in fiscal year 2001 resulting in 128 issues being identified. When this group of facilities was reassessed in fiscal year 2002, 69 issues where identified indicating improvement of our ISM implementation. In addition to assessments, the ISM Council developed three "white papers" that defined actions required to improve key ISM initiatives across all organizations utilizing NV assets. Finally, NV's contractor's ISM Improvement Team established a Work Control subcommittee to address needed improvements to the work control program. This group identifies, presents, and implements approved changes to the work control program and has also established the Skill of the Craft subcommittee, which evaluated the requirements needed to effectively implement a consistent Skill of the Craft program.



DOE Offices in Nevada

E. Livermore Site Office (LSO)

During 2002 several major initiatives were underway at LLNL. Significant progress was demonstrated in the following areas:

- implementation on actions associated with 2000-2;
- implementation on actions associated with the Plutonium Facility Emergency Power System (EPS);
- implementation of 10 CFR 830, Subpart B requirements; and
- successful completion of the OA inspection.

LLNL continued to progress on implementation of 2000-2 commitments. One of the key accomplishments was the completion of a phase II assessment of the Building 625 Fire Sprinkler System. The assessment team determined the Building 625 fire sprinkler system operability and reliability to be adequate based on the safety basis documentation, material condition of the system and implementation of the maintenance and surveillance program. No fire sprinkler system operability issues or concerns were identified. Opportunities for improvement

included finalization of construction drawings and reconciliation of discrepancies between procedures and safety documentation. Noteworthy practices included easy electronic availability of safety documents and work procedures to site personnel. Three design performance questions were also identified. Lessons learned from this review will be applied to subsequent phase II reviews.

In late March 2002, the Board staff conducted a review of the Plutonium Facility EPS. In response to the issues raised by the staff, LLNL developed an Action Plan. This plan systematically addressed the five primary concerns from the Board as follows:

- lack of identification/specification of requirements;
- lack of a documented/defined technical basis;
- lack of identification of vulnerabilities;
- prioritization and timely responses to corrective actions; and
- requirements for design of safety class electrical power systems not contained in the LLNL contract.

The Laboratory made substantial progress on the EPS action plan including significant upgrades to both the normal and emergency power systems to increase redundancy and improve reliability. The EPS design standards were derived from the original documentation and a site standard is being developed for "back-fitting" existing safety-class and safety-significant systems. An institutional review of the Plutonium facility EPS was completed in November 2002. This review utilized the 2000-2 phase II criteria, review and approach document and concluded that the EPS is operable and capable of reliably performing its safety function. The review also identified improvement areas including testing and formality/documentation. The Board was briefed on the progress with the EPS in August and at a September public meeting in Livermore, California.

The Laboratory continued to progress towards compliance with 10 CFR 830 Subpart B. During 2002, LLNL submitted three DSAs (Radiography Facility, Tritium Facility and the Hardened Engineering Test Facility) to the LSO for review and approval. Also, the LLNL prepared, submitted and implemented a compliant Unreviewed Safety Question (USQ) procedure. The Laboratory will be conducting a comprehensive USQ review early next calendar year that evaluates USQ implementation at all of LLNL's nuclear facilities and activities. LSO will be shadowing this review. LLNL prepared several requests for schedule exemptions to 10 CFR 830, Subpart B. Progress on development of compliant submittals has been delayed due to other priorities and development of new safety documents for three facilities (Building 696-Radioactive Waste Storage Area, DWTF and the WIPP Mobile Vendor).

Aerial view of Lawrence Livermore National Laboratory

During fiscal year 2002, the LSO utilized the OA audit to verify the effectiveness of ISMs implementation. In June 2002, OA conducted an inspection of ES&H and emergency management programs at LLNL. As a result of the inspection, the OA concluded that LLNL has maintained an effective ISM program. LLNL's program has significantly improved as various management systems have matured and new processes have been established. The OA review team identified several notable aspects of the LLNL ISMS such as the ES&H team support, the inclusion of ES&H needs into strategic planning process, and the systematic approach to the development of safety basis documents for non-nuclear facilities. The team also identified weaknesses in the feedback and improvement function, specifically in the corrective action management systems and timeliness of corrective actions. Another weakness identified by the review team was in the area of testing and maintenance of fire protection systems.

The areas of weaknesses from the OA review were consistent with findings identified by the operational awareness activities conducted by LSO, LLNL's Assurance Review Office (ARO) roll-up of the Directorate's Self-Assessment results and the ARO's independent reviews. LSO

will continue to monitor LLNL's progress on the corrective actions for the OA reviews through operational awareness activities and the validation process.

The annual update of the LLNL ISMS Description was approved by LSO on March 28, 2002. This revision addressed changes to work authorization levels.

The Laboratory hosted several visits by the Board's staff during calendar year 2002 on topics including: electrical instrumentation and control, Heavy Element Facility risk reduction activities, materials disposition, weapons response data, DWTF and the LLNL USQ process. A public meeting was held with the Board in late September 2002.

F. Oak Ridge Operations Office (OR)

Monthly Status Reports to the Board on ISM Status

The OR and Bechtel Jacobs Company LLC developed a CAP in April 2002 to describe key actions taken to address ISM issues raised by the Board in a letter of October 15, 2001.

OR has been providing monthly status reports on the CAP to the Board staff describing actions and status of completion as well as projected completion dates.

Briefings to the Board

OR management has completed two briefings to the Board. These took place on February 14, 2002 and May 24, 2002. The briefings were comprehensive and questions by the Board were answered.

Addition of Resources

Three Federal employees were added in 2002 to support the DSA program with an additional individual reporting in January 2003, and another position to be filled shortly thereafter. Additional support is being provided in 2003 by personnel contracted to OR (approximately ten individuals). A concerted effort is underway in 2003, with support from EM, focusing on improving the EM nuclear safety program. This effort is being led by EM-5, and RL. Bechtel-Jacobs Co. (BJC) has added approximately 60 employees to support their safety basis activities at all of their sites.

DOE Oak Ridge Office in Tennessee

Other Activities

- Sodium fluoride traps depressurization – The contractor and the OR Operational Readiness Review (ORR) for the project was completed in January 2003. Sodium fluoride traps depressurization commenced in February 2003.
- ISMS – The BJC and OR (Federal program) verifications are expected to be completed by March 2003. Occupational Safety and Health Administration (OSHA) safety statistics have improved over the 2001 rates for the contractors.
- 2000-2 VSS – VSSs were identified as well as subject matter experts supporting these systems.
- FTCP Panel – Safety SMEs have been and are being processed into the TQP. Completion of qualification of present Safety SMEs is scheduled for end of 2003.

G. Office of River Protection (ORP)

The ORP and related site contractors continue to maintain a strong safety culture within its workforce, while continuing to make visible progress in its mission. During the year, the ORP completed a review of its organization structure and staffing needs and reorganized to streamline the organization, to instill line management accountability, and to align ORP to operate effectively as an owner-driven, safe-performing organization. In addition, in the fourth quarter of 2002, the SME program was upgraded to include required completion of DOE Technical Qualification Standards for specialty science and engineering area qualification. The ORP identified a backup for each specialty area SME and developed a plan to transition two Facility Representatives out of the SME program and replace them with other members of the ORP organization. In the first quarter of 2003, the SME program for ORP will be further upgraded to incorporate hiring standards, enhance organizational duties and responsibilities, program evaluation and assessment standard, and enhanced qualification card elements. SMEs will have field walk down requirements, On the Job Practical Factors and On the Job Evaluations, final exam

requirements, and requalification and continuing qualification requirements.

ORP continues oversight of the new Waste Treatment and Immobilization Plant (WTP) contract with Bechtel National, Inc. (BNI) for designing, constructing, commissioning and supporting transition to operation of the WTP. BNI advanced the safety aspects of the WTP design through application of BNI's QA Program, Safety Requirements Document, and ISM system.

Safety analyses of front-end design documents were completed and incorporated in Preliminary Safety Analysis Reports submitted to ORP for review in support of phased requests for construction authorization of permanent plant facilities. After extensive technical interaction on these submittals and related design documentation, the Department authorized construction of the basemats of the HLW and Low Activity Waste (LAW) vitrification facilities in July 2002. This supported achievement of the Hanford Federal Facility Agreement and Consent Order Milestone M-60-06 for first placement of structural concrete. Further construction authorizations were provided in August (walls-to-grade construction in HLW and LAW) and November 2002 (full construction authorization of HLW, LAW, portions of balance of facilities, and early authorization for portions of the pretreatment basemat).

In addition to review of requested construction authorizations, ORP engaged in a series of topical inspections of BNI work processes to evaluate implementation of Authorization Basis commitments and to provide feedback to BNI in areas requiring improvement. Work performed on projects under ORP authorizations has generated in excess of six million job hours without a lost time accident.

During 2002, ORP completed three phase II assessments of VSS at Hanford Tank Farms in response to 2000-2. Findings from the assessments were resolved in December 2002. The contractor, CH2M Hill Hanford Group, has committed to perform four additional phase II type assessments during fiscal year 2003.

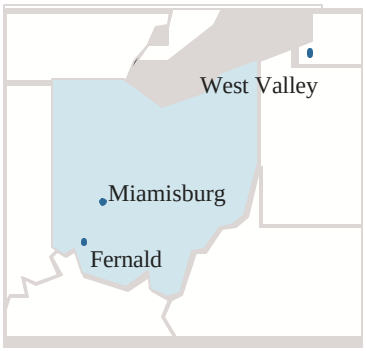
The ORP and CH2M Hill Hanford Group have continued to perform actions to extend the useful life of the Hanford Double-Shell Waste Storage Tanks (DST). A Technical Safety Requirement was established for control of waste chemistry to minimize tank corrosion. Waste chemistry has been corrected in three of four DSTs found out of specification, and work continues aggressively on the final tank. Remote ultrasonic and visual inspections continue to validate tank integrity and project useful tank life.

The ORP and its contractors continue to improve institutionalization of the ISM guiding principles as the fundamental premise for safe quality work performance. ORP completed a reverification of ISM implementation at Hanford Tank Farms, as recommended by the Board, in September 2002. Improvements were noted in feedback and improvement processes. Implementation by CH2M Hill Hanford Group of an Operations Improvement Plan is expected to result in continuous improvement necessary to safely and effectively execute the Tank Farms Accelerated Closure Plan and waste feed delivery to the WTP. Also, preparations were made for a phase I/II ISM review of BNI that will take place in fiscal year 2003.

H. Ohio Field Office (OH)

OH has three major sites of interest to the Board: Fernald Environmental Management Project (Fernald), Miamisburg Closure Project (Miamisburg), and West Valley Demonstration Project (West Valley). ISM reviews and updates in 2002 for these key sites are as follows:

- Fernald - February 2002
- Miamisburg – rescheduled to May 2003
- West Valley – November 2002



Each of these three OH sites (Fernald, Miamisburg, and West Valley) conducts a formal, annual review. The basis for each site's review is established in a formal ISM annual review plan. The review plans are approved at the project office level, and two OH representatives participate on each review team.

Fernald

Board staff visited the Fernald site four times in 2002.

No issues were identified as a result of these interactions. Additional technical discussions were held related to the disposition of thorium waste, potential exposure of employees to nitrogen dioxide, potential chemical incompatibilities encountered during decontamination and demolition activities, and DSAs performed for the waste pits remedial action project and the radon control system. No issues were identified as a result of these discussions. There are no open corrective actions for the Fernald site and no applicable actions resulted from Board recommendations issued during this time.

Miamisburg

The 2002 ISM Review was rescheduled for May 2003. The reason for the delay was the contract changeover from BWXT of Ohio, Inc. to CH2M Hill Mound Inc. and to allow the new contractor time to review the ISM Program and adopt or incorporate change.

Specific accomplishments at the Miamisburg Closure Project for fiscal year 2002 include:

Risk Reductions. The cumulative process hold-up tritium inventory was reduced by 476,500 curies. This is 87 % of the estimated inventory that is process related. It was 238 % of the fiscal year 2002 goal of 200,000 curies.

Total LLW shipped to NTS and Envirocare in fiscal year 2002 was 864,207 cubic feet. This was 171 % of the fiscal year 2002 goal. Cumulatively, 43 % of the LLW estimate has been shipped off site.

Two shipments of TRU waste were made to SRS for a total of 27.6 cubic meters. This represents 9 % of the legacy inventory. Pending SRS ability to receive, 272 cubic meters of TRU waste will be shipped during fiscal year 2003.

Mission Accomplishments. Forty-one percent or 126 of 306 acres have been transferred to the Miamisburg Mound Community Improvement Corporation.

Eighty-eight of 164 facilities (54%) have either been demolished or decommissioned for transfer; and 183 of 252 soil release sites (73%) have been remediated with only 26 release sites to be further assessed for necessary remediation.

Richland placed 475 of 2100 metric tons of Spent Fuel into safe, dry, compliant storage bringing the current total to 800 metric tons now removed from the shoreline. The Spent Fuel Project also began utilizing the Fuel Transfer System, moving fuel out of K-East, ahead of the Board milestone date. Project workers reached over four million hours without a lost time injury.

West Valley

West Valley has a mature ISMS in place. West Valley completed its third ISM Annual Review in November 2002. The review team reported that ISM systems continue to be effectively maintained and implemented.

The West Valley was initiated by the Department, pursuant to the West Valley Demonstration Project Act of 1980 (PL96-368). It is on the site of a former commercially operated SNF reprocessing facility, that had reprocessed commercial fuel, as well as fuel from Hanford's N-Reactor. The Act requires the Department to conduct a high-level radioactive waste solidification demonstration project and decommission facilities used for the Project. The Project completed its successful six-year vitrification processing campaign in 2002. Twenty-four million curies of HLW were safely solidified into 275 canisters of stable glass waste form. The owner, New York State, is licensed by the Nuclear Regulatory Commission. The technical specifications of the license are being held in abeyance while the Department conducts the project.

I. Richland Operations Office (RL)

RL has accelerated site cleanup and continues to improve the effectiveness of their ISMS to reduce risk and perform work safely. Specific examples include:

- Negotiated breakthrough Performance Incentives with Fluor accelerating the Hanford Performance Measurement Program initiative commitments.
- Ready to award River Corridor Cleanup Contract, accelerating the overall cleanup of the River Corridor by over 20 years.
- Completed stabilization of plutonium-bearing solutions (highest risk material in the facility) and approximately 50% of polycube stabilization is complete at the Plutonium Finishing Plant (PFP). Project workers have reached over one million hours with no days away from work.
- Stabilized and packaged 66% of plutonium residues; currently a year ahead of schedule.

- Removed all remaining spent nuclear fuel, representing 650,000 curies, from the 324 Building to storage pads in the central plateau, completing a Performance Management Plan goal almost seven months ahead of schedule.

- Completed 35,000 shipments representing 665,000 tons of LLW to the Environmental Restoration Disposal Facility Project. There have been no lost time injuries since project inception in 1996.

J. Rocky Flats Field Office (RF)

RF's major accomplishments in reducing risk and performing work safely are:

2000-1 Implementation Plan at RF

- Residues. On May 1, 2002, RF completed repackaging all residues for interim safe storage awaiting shipment to the WIPP. This milestone was complete about a month earlier than was committed to the Board. A total of 106 metric tons were stabilized and/or repackaged since the start of residue operations in January 1998. As of December 2002, approximately 75% of residues have been shipped to WIPP.

- Metal and Oxides. The May 2002 commitment to repackage all metal and oxides was not met as a result of a delayed startup, lower than anticipated production rates, feed material uncertainties, and diminishing system reliability. Improvements to increase overall production rates continue to be implemented. For example, in December 2002, pre-treatment of < 80 wt-% oxides suspected to contain organic compounds commenced and the startup reviews for the new moisture measurement technique for < 80 wt-% oxides was also completed. Additionally, to hasten the completion of metal and oxide repackaging, a decision was made in November 2002 to repackage and send approximately 970 kilograms of low-purity oxides to the WIPP. As of December 12, 2002, 1186 compliant 3013 containers (out of an estimated total of 1760) of metal and oxides have been produced. A completion date of October 2003 is now expected for all metal and oxides.

94-3 Implementation Plan at RF

- In the final quarterly report for the 94-3 implementation plan, the Department committed to notify the Board before discontinuing Building 371 upgrades as an interim storage option for nuclear material. With the Plutonium Stabilization and Packaging System operating along with plans and schedules to repackage all remaining nuclear material and with reasonable assurance that nuclear shipment to the SRS will continue, all "Go/No Go" criteria in Milestone 6-5 was met. A final decision has been made not to upgrade Building 371 and the Board has been notified.

2000-2 Implementation Plan at RF

- RF completed the phase II assessment of VSS (specifically the ventilation and fire protection systems in Building 371) in March of 2002. Corrective actions identified for findings associated with this assessment were also promptly completed.

- In August 2002, RF implemented the System Engineer Program as part of the implementation of DOE O 420.1A, "Facility Safety," including qualification of the initial cadre of system engineers.

K. Savannah River Operations Office (SR)

- SRS completed all implementation actions called for in the Department's 2000-2 implementation plan ahead of schedule. The existing programs stood up well against the concerns of the recommendation, and assessments undertaken exceeded the minimum requirements, particularly for phase II.

- The SRS implementation strategy for compliance with 10 CFR 830 will ensure that all SRS nuclear facilities are either in compliance or are scheduled to be in compliance by April 2003. SRS supported the Department National Transportation Program in developing the groundwork for decisions on the implementation of 10 CFR 830 requirements for onsite transportation.

SR Highlights:

- *The HLW inventory in underground storage tanks was reduced by over 2 Million gallons (5%).*
- *The Site produced 160 canisters of vitrified HLW.*
- *SRS stabilized over 3/4 million gallons of waste in the Saltstone facility.*

Ten Million Safe Hours -- On November 25, 2002, Bechtel Savannah River Construction employees achieved their first-ever safety milestone of ten million safe hours without a lost-time injury resulting in days away from work. An average construction firm in the United States usually experiences 135 lost-time accidents in ten million hours worked. This achievement represents the longest string of safe days and hours worked by the more than 1,100 construction employees – over four consecutive years without a lost-time injury.

- The Board staff reviewed the SRS USQ Program. The staff concluded that WSRC has a well-defined USQ policy and praised the procedure. The staff concurred that the procedure complies with the intent of 10 CFR 830, Subpart B.
- A Safety Basis Strategy (SBS) was developed and implemented to enhance early planning in projects and safety basis upgrade or development efforts. Resulting SBS documents capture scope, roles and responsibilities, cost, schedule, and management expectations, and sets means to accomplish them. The motive is to ensure an end product that the full team will fully endorse.
- The Site developed a 10 CFR 830 Authorization Basis for the HLW Tank Farms and approval is projected for December 23, 2003.
- SRS is supporting the Nuclear Power 2010 initiative. The site provided support to the Dominion Energy, Inc. study for siting of a commercial power reactor at SRS and has initiated discussions with NE-1 concerning a lease option proposed by Dominion.
- The site provided significant leadership for the development of a complex-wide High-Efficiency Particulate Air (HEPA) testing and certification program. SRS personnel worked closely with EM-5 and RL in the development of a survey instrument and assessment criteria for HEPA testing at all EM sites. SRS also developed a proposal for the elimination of redundant HEPA testing by the Oak Ridge functional test facility.
- The Consolidated Hazards Analysis Process has been implemented at SRS for numerous projects, and savings have been realized. The improvement results from upfront integration of hazards analysis. Multiple disciplines are brought together in a team so that many purposes are served at once. Additionally, documentation is reduced from integration of hazards analysis and functional classification into a consolidated report. The methodology manual has been completed and published, and leads have been trained. This process preceded the recently published SAFT-0085 on hazard analysis integration, and exceeds the elements of that standard.
- SRS initiated draining of salt cake in preparation for salt dissolution activities under the Low Curie Salt disposal program.
- On September 17, 2002, the site awarded two Engineering, Procurement and Construction contracts to design and build a small scale Salt Waste Processing Facility.
- As of September 23, 2002, the Nuclear Material Management Division (NMMD) completed two years and eight million hours without a lost workday case. As of the end of the fiscal year, the time since the last lost time work injury NMMD facilities is:
  - Five safe years in FB Line and Spent Fuel Programs.
  - Four safe years in F Canyon,
  - Three safe years in HB Line, and
  - Two safe years in H Canyon
- SRS improved the radiological status of ten major operating areas within the 235-F and FB-Line Facilities. SRS realized improved safety margins by decontaminating and downgrading the number and level of contamination areas and airborne areas, thereby reducing personnel exposure and radiological hazards.

L. Y-12 Site Office (YSO)

The Y-12 Site Office completed the following in 2002:

- 9206 Deactivation and Risk Reduction – Following successful contractor and NNSA ORR, activities to stabilize pyrophoric materials were completed.
- Following successful contractor and NNSA Readiness Assessments, the depleted uranium ReTech furnace was restarted.

- Following successful contractor and NNSA Readiness Assessments, the Californium Shuffler was restarted.
- 9212 Enriched Uranium Operations Restart – Contractor ORR was completed in December 2002. NNSA ORR was completed in February 2003.
- Fire Protection – Work detailed in the Fire Protection Comprehensive CAP continues.
- Recommendation 2000-2: Teams composed of YSO and BWXT staff completed three phase II assessments. BWXT developed CAPs for issues that resulted. Development of a process to institutionalize these assessments is underway.
- Improvements in the maintenance program were noted this year. Additionally, maintenance outages were used at nuclear facilities to accomplish a number of maintenance activities.
- The Board staff noted improvements at Y-12 in storage and disposition of non-material access area materials.
- Design activities continue for the Highly Enriched Uranium Materials Facility (HEUMF) and the Special Materials Complex.
- The NNSA YSO was reviewed by a team from NA-53 and received an above average score. The focus of the review was the processes utilized by YSO to oversee contractor performance in ES&H. The team concluded that the YSO staff is highly dedicated, have competence commensurate with assigned responsibilities, and strive to accomplish the activities they are assigned through the YSO Management system in a highly professional manner.

Y-12 Building 81-22, a nuclear facility, was demolished in 2002 following removal of inventory at the end of 2001. Another 25 general use facilities were demolished equating to approximately 288,000 square feet.

V. Other Board Interface Activities

The Office of the Departmental Representative to the Defense Nuclear Facilities Safety Board (Departmental Representative) manages the Department's overall interface with the Board and provides advice and direction for resolving safety issues identified by the Board. DOE M 140.1-1B, *Interface with the Defense Nuclear Facilities Safety Board* details the Department's process used to interface with the Board and the Board's staff. In addition to the activities relating to the Board outlined in the prior sections of this report (Sections I-IV), the Department interacts with the Board and its staff on several other activities aimed to further ensure adequate protection of public and worker health and safety and the environment at the Department's defense nuclear facilities. These activities include:

- coordination of the Board's review of the Department's safety directives;
- briefings, site visits, and other Board interactions;
- responses to Board reporting requirements;
- attendance and presentations at the Board's public meetings;
- Secretary briefing with the Board members;
- Safety Issues Management System (SIMS);
- maintenance of the information archive of Board-related documents; and
- interface workshop and interface manual.

A. Coordination of Board Review of Department Safety Directives

One of the Board's significant responsibilities is to review and evaluation the Department's safety directives and standards that apply to the design, construction, operation, and decommissioning of Department's defense nuclear facilities. The Board reviews the body of the Department's directives (including rules, policies, notices, orders, manuals, handbooks, guides, and standards) and identifies those specific directives "of interest" to the Board due to their applicability to pubic health and safety. Whenever the Department develops changes to the identified directives or identifies new directives potentially "of interest" to the Board, the Board is provided an opportunity to review and comment on the changes prior to approval of the changes by Department management. The Departmental Representative Office coordinates this review process with the Board to ensure that the Board and its staff are notified of each change and given an opportunity for review and comment prior to issuance or re-issuance of the directives. *Appendix A* provides a listing of the orders identified as "of interest" to the Board, and a listing of Departmental safety directives "of interest" to the Board that were changed in 2002.

The Board and its staff conducted 135 site visits during 2002.

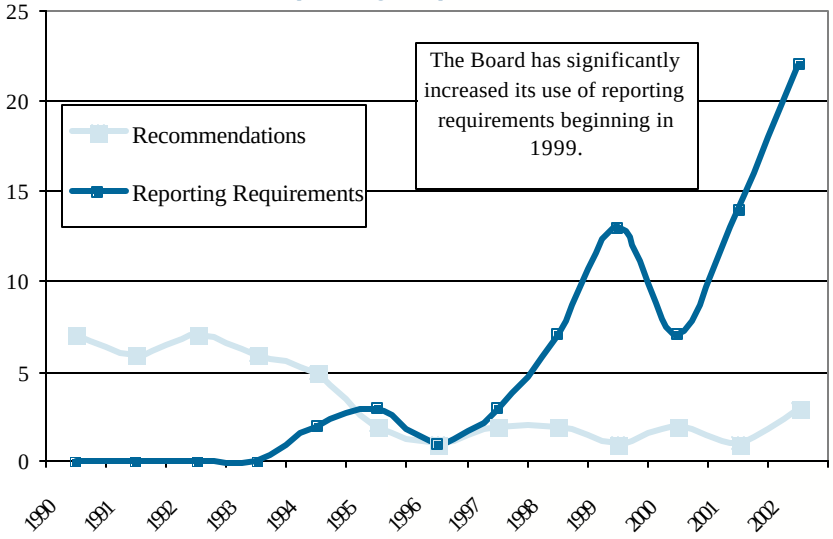
B. Briefings, Site Visits, and Other Board Interactions

The Department, the Board, and the Board's staff are in constant contact to identify and resolve safety issues at the Department's defense nuclear facilities. The Department provides briefings to the Board on a regular basis in order to:

- update the Board on the Department's progress towards resolving issues identified in Board recommendations;
- update the Board on the Department's safety initiatives; and
- update the Board on specific safety issues as requested by the Board.

The Board and the Board's staff regularly visit the Department's defense nuclear facilities to perform reviews of the Department's safety initiatives, safety facilities and operations, and attend briefings at the sites. *Appendix B* provides a summary of site visits supported by the Department during 2002. In addition, Department personnel conducted numerous teleconferences and video conferences to exchange information and resolve safety issues.

Table 5.A - Trend in Reporting Requirements



The Board issued a record 22 reporting requirements in 2002.

The Board held only one public meeting in 2002.

C. Responses to Board Reporting Requirements

The Board communicates with the Department through a variety of channels including formal recommendations and reporting requirements, letters requesting action and information, and letters providing suggestions and information, such as staff issue reports and trip reports. Communication channels also include Board and Board's staff requests for information, public meetings, briefings and discussions, and site visits. The Board's choice of communication vehicle suggests the level of the Board's concern, with the more formal channels used for clearly-defined safety issues that require prompt attention by Departmental managers. During 2002, the Board issued 22 sets of formal reporting requirements, pursuant to Chapter 21, Section 313(d) of the Atomic Energy Act of 1954 [42 U.S.C. 2286b(d)], as shown in Table 5.B.

D. Board Public Meetings

The Board holds public meetings periodically to review significant safety and management issues in a public forum. The Board provides advance public notice for these meetings pursuant to the provision of the "Government in the Sunshine Act" (5 U.S.C. 552b). During 2002, the Department supported one public meeting conducted by the Board.

E. Secretary of Energy Periodic Briefings with the Board Members

The Secretary typically provides periodic briefings to the Board members. The Secretary initiated these briefings in 1994 to facilitate senior level information exchange on key safety and management issues, and on relative priorities and directions. The Secretary, Deputy Secretary, Under Secretary, and the Departmental Representative typically represent the Department in these periodic reviews. One periodic briefing was held during 2002.

F. Safety Issues Management System (SIMS)

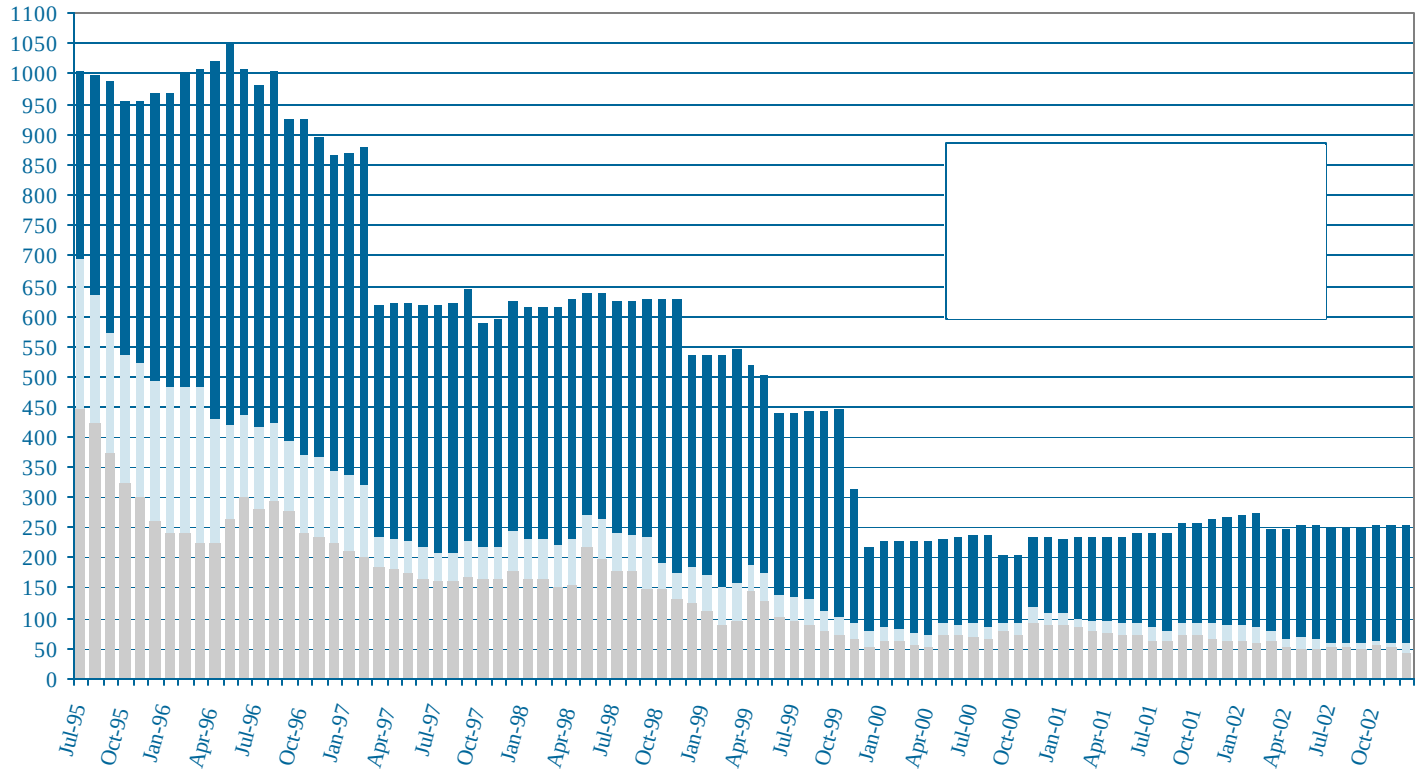
The Department established a Department-wide commitment management tool, SIMS, in August 1995. Using this tool, the Department has reduced the number of outstanding commitments related to Board recommendations from 694 in August 1995 to 108 in December 2002. Figure 5.B shows the historical trend on implementation plan commitments. The total number of overdue commitments related to Board recommendations has also declined significantly, from 245 in August 1995 to 10 in December 2002. In addition to commitments and actions related to Board recommendations, SIMS is also used to manage commitments and actions related to other interactions between the Department and the Board, such as Board requests for action or information and Department commitments in letters to the Board. As of December 2002, the Department is tracking 69 open letter commitments to the Board.

The Departmental Representative conducts qualitative and technical reviews of the Department's implementation plans and other outgoing correspondence to the Board to identify and capture Department commitments. Commitment information identified from these documents is entered into the SIMS database. Monthly summary reports on the status of commitment implementation and completion are distributed to responsible Department managers, points of contact, and Secretarial Officers. Quarterly SIMS reports are also prepared to focus attention where needed. Department personnel can access detailed SIMS information and use various view, sort, and report formats via an on-line, Internet-based user interface.

G. Information Archive of Board-Related Documents

A key part of identifying, understanding, and resolving safety issues is maintaining

Figure 5.A - Historical Trend on Implementation Plan Commitments



effective communication between the Department and the Board. One of the key mechanisms to facilitate communication is regular correspondence between the Department and the Board. A large portion of the written communication involves the Board's recommendations and the associated deliverables, schedules, and reporting requirements contained in the Department's recommendation implementation plans. In addition, the Department receives and responds to trip reports detailing visits by the Board and the Board's staff to Department facilities. The Department also receives specific requests from the Board and the Board's staff for particular information or action by the Department. *Appendix C* provides a summary of key correspondence between the Department and the Board for 2002; this summary does not include transmittal of requested information and routine distribution of assessments and evaluations.

The Departmental Representative maintains an information archive of all correspondence, reports, plans, assessments, and transmittals between the Department and the Board online at https//www.hss.doe.gov/deprep. The website provides an efficient way for the Department to share information, except information classified as official use only or higher, pertaining to defense nuclear facilities activities.

The following types of documents are included in the information archive:

- Board recommendations;
- Department responses and implementation plans;
- Department letters to the Board;
- Board letters to the Department;
- selected key letters concerning the status of recommendations;
- policy statements from the Secretary and the Board;
- Annual Reports to Congress from the Secretary and the Board concerning Board-related matters;
- Resumes of the Board members;
- Department Manual for Interface with the Board; and
- Board staff issue reports provided to the Department by the Board.

https://www.hss.doe.gov/deprep/

The Departmental Representative's web site provides comprehensive information on resolution of Board safety issues

Table 5.B – Formal Reporting Requirements Established by the Board in 2002

Date	Reporting Requirements	Days to Report
2/22/02	A report on the design requirements and guidance and status of QA improvement at LANL.	60
2/15/02	A report regarding Multi-Canister Overpack in relation to 94-1, *Improved Schedule for Remediation in the Defense Nuclear Facilities Complex.*	60
3/07/02	A report addressing issues on depleted uranium storage at SRS.	120
3/07/02	A report on the issues on the preliminary design of Sandia Underground Reactor Facility (SURF).	60
3/21/02	A report relative to the issues raised in the Board's Technical Report 32 on SRS canyon utilization.	60
3/29/02	A report addressing the recommendations on the high-level waste operations at the SRS.	60
4/19/02	A report addressing issues on the emergency power system at the LLNL Plutonium Facility (B 332).	30
4/23/02	A report addressing the deficiencies on new Plutonium-238 scrap recovery line at the LANL.	60
5/13/02	A report addressing issues on fire protection for Building 9212, B-1 Wing at the Y-12.	60
5/20/02	A report regarding the management of inactive nuclear materials at the Department's Nuclear Weapons Laboratories.	120
6/27/02	A report summarizing the Department's plan for further development of alternative technologies for the removal of cesium from salt wastes at the SRS relative to the 2001-1 implementation plan.	60
7/12/02	A report regarding the approved guidance for verifying thermal stabilization of plutonium oxide.	60
7/17/02	A report outlining specific actions to implement the recommendations of the Department's Commission on Fire Safety and Preparedness.	60
7/19/02	A report on seismic design and testing at the TEF at Savannah River.	60
8/01/02	A report regarding the actions being taken to ensure support in the implementation of safety initiatives at the Pantex Plant.	30
8/09/02	A report regarding issues related to material stabilization at the LLNL and Revision 2 of the 2000-1 implementation plan.	30
9/23/02	A report on the Department's plans for remediating the hazards posed by the sodium fluoride (NaF) traps stored in Building 3019A at ORNL in a safe and timely manner.	60
11/04/02	A report addressing the deficiencies identified in the enclosed staff regarding safety and design basis of the Hanford WTP.	60
11/13/02	A report addressing criticality safety for operations in Building 9212, actions taken at Building 9212 and across the site to ensure the continued adequacy of the Y-12 criticality safety program.	60
11/13/02	A report on actions that will be taken to ensure controls to protect against significant exposure to radiological hazards at the Pantex Plant are afforded the protection required by safety-significant designation.	60
12/16/02	A report addressing the issues on the WTP at Hanford.	45
12/27/02	A report addressing the issues on the design and safety bases of the HEUMF at the Y-12.	90

H. Interface Workshop and Interface Manual

The Department, through the Departmental Representative, must ensure that the Department's personnel are provided with appropriate Board interface training and assistance. Training and assistance helps to ensure the integrity of the Department's efforts in resolving safety issues identified by the Board. Additionally, training works to ensure that all affected Departmental elements are actively involved in properly resolving safety issues and meeting recommendation implementation plan commitments, Board reporting requirements, and letter commitments.

The Department's key tools for interface training are DOE M 140.1-1B and the Department's periodic interface workshop. DOE M 140.1-1B outlines the Department's process used to interface with the Board and the Board's staff. It is available to Departmental personnel through the Departmental Representative's website or office. The manual was revised by the Department and re-issued in March 2001.

The Department held an interface workshop in October of 2002. The workshop featured:

- a review of interface policies and practices;
- Department initiatives in response to key Board issues;
- interface tools and infrastructure;
- lessons learned for effective interfacing with the Board;
- a question and answer forum with the Board members; and
- an address by the Under Secretary.

The Department's Interface protocols and practices are contained in DOE M 140.1-1B, *Interface with the Defense Nuclear Facilities Safety Board.*

Appendix A
Orders and Departmental Safety Directives Identified by the Board as "of Interest"

Table A.1 – Group 1 - Currently Active Orders

Order Number	Title
O151.1A	Comprehensive Emergency Management System
O210.1, Chg 2	Performance Indicators and Analysis of Operations Information
O225.1A	Accident Investigations
O231.1, Chg 2	Environment, Safety, and Health Reporting
O232.1A	Occurrence Reporting and Processing of Operational Information
O251.1A	Directives System
O252.1	Technical Standards Program
O360.1B	Federal Employee Training
O413.3	Program and Project Management for the Acquisition of Capital Assets
O414.1A	Quality Assurance
O420.1A	Facility Safety
G421.1-2	Implementation Guide for use in Developing Documented Safety Analyses to meet Subpart B of 10 CFR 830
G423.1-1	Implementation Guide f or use in Developing Technical Safety Requirements
G424.1-1	Implementation Guide for use in Addressing Unreviewed Safety Question Requirements
O425.1B	Startup and Restart of Nuclear Facilities
O430.1A	Life Cycle Asset Management
O433.1	Maintenance Management Program for DOE Nuclear Facilities
O435.1, Chg 1	Radioactive Waste Management
O440.1A	Worker Protection Management for DOE Federal and Contractor Employees
O442.1A	Department of Energy Employee Concerns Program
O451.1B	National Environmental Policy Act Compliance Program
O452.1B	Nuclear Explosive and Weapon Surety Program
O452.2B	Safety of Nuclear Explosive Operations
O460.1A	Packaging and Transportation Safety
O460.2, Chg 1	Departmental Materials Transportation and Packaging Management
O461.1	Packaging and Transfer or Transportation of Materials of National Security Interest

This appendix provides a listing of the orders and departmental safety directives identified by the Board as "of interest." Table A.1 provides the Orders of Interest to the Board and Table A.2 provides the Department's Safety Directives Coordinated with the Board's staff and issued in 2002.

Table A.1 – Group 1 - Currently Active Orders, Continued

Order Number	Title
O470.2B	Independent Oversight and Performance Assurance Program
O474.1A	Control and Accountability of Nuclear Materials
O3790.1B	Federal Employee Occupational Safety and Health Program
O4700.1, Chg 1	Project Management System
O4700.4	Project Manager Certification
O5400.1, Chg 1	General Environmental Protection Program
O5400.5, Chg 2	Radiation Protection of the Public and the Environment
O5480.4, Chg 4	Environment Protection, Safety, and Health Protection Standards
O5480.19, Chg 2	Conduct of Operations Requirements for DOE Facilities
O5480.20A, Chg 1	Personnel Selection, Qualification, and Training Requirements for DOE Nuclear Facilities
O5480.30, Chg 1	Nuclear Reactor Safety Design Criteria
O5530.1A	Accident Response Group
O5530.2	Nuclear Emergency Search Team
O5530.3, Chg 1	Radiological Assistance Program
O5530.4	Aerial Measuring System
O5600.1	Management of the Department of Energy Weapon Program and Weapon Complex
O5632.1C	Protection and Control of Safeguards and Security Interests
O5660.1B	Management of Nuclear Materials

Section 312(a)(1) of the Atomic Energy Act of 1954 requires the Board to review and evaluate the content and implementation of standards relating to design, construction, operation, and decommissioning of defense nuclear facilities. The Board is required to recommend to the Secretary those specific measures that should be adopted to ensure that the public health and safety are adequately protected.

Table A.1 – Group 2 - Archived or Deleted Orders of Interest to the Board Cited in Current Contracts

Order Number	Title
O1300.2A	Department of Energy Technical Standards Program
O1360.2B	Unclassified Computer Security Program
O1540.2, Chg 1	Hazardous Material Packaging for Transport - Administrative Procedures
O1540.3A	Base Technology for Radioactive Material Transportation Packaging Systems
O4330.4B	Maintenance Management Program
O5000.3B, Chg 1	Occurrence Reporting and Processing of Operations Information
O5400.2A, Chg 1	Environmental Compliance Issue Coordination
O5400.3	Hazardous and Radioactive Mixed Waste Program
O5400.4	Comprehensive Environmental Response, Compensation, and Liability Act Requirements
O5480.21	Unreviewed Safety Questions
O5480.22, Chg 2	Technical Safety Requirements
O5480.23, Chg 1	Nuclear Safety Analysis reports
O5440.1E	National Environmental Policy Act Compliance Program
O5480.1B, Chg 5	Environmental, Safety and Health Program for DOE Facilities
O5480.3	Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances, and Hazardous Wastes
O5480.5, Chg 2	Safety of Nuclear Facilities
O5480.6	Safety of Department of Energy-Owned Nuclear Reactors
O5480.7A	Fire Protection
O5480.8A, Chg 2	Contractor Occupational Medical Program
O5480.9A	Construction Safety and Health Program
O5480.10	Contractor Industrial Hygiene Program
O5480.11	Radiation Protection for Occupational Workers
O5480.15	Department of Energy Laboratory Accreditation Program for Personnel Dosimeter
O5480.17	Site Safety Representatives
O5480.18B	Nuclear Facility Training Accreditation Program
O5480.24	Nuclear Criticality Safety
O5480.25	Safety of Accelerator Facilities

Table A.1 – Group 2 - Archived or Deleted Orders of Interest to the Board Cited in Current Contracts, Continued

Order Number	Title
O5480.26	Trending and Analysis of Operations Information Using Performance Indicators
O5480.28	Natural Phenomena Hazards Mitigation
O5480.29	Employee Concerns Management System
O5480.31	Startup and Restart of Nuclear Facilities
O5481.1B, Chg 1	Safety Analysis and Review System
O5482.1B, Chg 1	Environment, Safety, and Health Appraisal Program
O5483.1A	Occupational Safety and Health Program for DOE Contractor Employees at Government-Owned Contractor-Operated Facilities
O5484.1B	Environmental Protection, Safety and Health Protection Information Reporting Requirements
O5500.1B	Emergency Management System
O5500.2B, Chg 1	Emergency Categories, Classes, and Notification and Reporting Requirements
O5500.3A, Chg 1	Planning and Preparedness for Operational Emergencies
O5500.4A	Public Affairs Policy and Planning Requirements for Emergencies
O5500.7B	Emergency Operating Records Protection Program
O5500.10	Emergency Readiness Assurance Program
O5610.10	Nuclear Explosive and Weapon Safety Program
O5610.11	Nuclear Explosive Safety
O5610.12	Packaging and Offsite Transportation of Nuclear Components, and Special Assemblies Associated with the Nuclear Explosive and Weapon Safety Program
O5632.11	Physical Protection of Unclassified Irradiated Reactor Fuel in Transit
O5700.6C, Chg 1	Quality Assurance
O5820.2A	Radioactive Waste Management
O6430.1A	General Design Criteria

Table A.1 – Group 3. Related Documents Setting Forth Safety-Related Requirements

Order Number	Title
N203.1	Software Quality Assurance
P410.1A	Promulgating Nuclear Safety Requirements
P411.1	Safety Management Functions, Responsibilities and Authorities
P426.1	Federal Technical Capability for Defense Nuclear Facilities
P441.1	Radiological Protection for DOE Activities
P450.1	Environment, Safety, and Health Policy for the Department of Energy Complex
P450.2A	Identifying, Implementing, and Complying with Environment, Safety, and Health Requirements
P450.3	Authorizing Use of the Necessary and Sufficient Process for Standards-Based Environment, Safety and Health
P450.4	Safety Management System Policy
P450.5	Line Environment, Safety and Health Oversight
P450.6	Secretarial Policy Statement on Environment, Safety, and Health
10CFR820	Procedural Rules for DOE Nuclear Activities
10 CFR 830, Subpart A	Quality Assurance Requirements
10 CFR 830, Subpart B	Safety Basis Requirements
10 CFR 834	Radiation Protection of the Public and the Environment
10 CFR 835	Occupational Radiation Protection
48 CFR 970.5204-2	Laws, Regulations, and DOE Directives
48 CFR 970.5215-3	Conditional Payment of Fee, Profit, or Incentives
48 CFR 970.5223-1	Integration of Environment, Safety, and Health Into Work Planning and Execution
Various	DOE Manuals, Guides, Handbooks, and Technical Standards Associated with Safety Management

The Department issued 20 new directives that were reviewed by the Board's staff. In addition, another 40 draft safety directives have received Board staff review and are being finalized prior to issuance.

Table A.2 – Department Safety Directives Coordinated with the Board Staff and Issued in 2002

Order Number	Title	Date Issued
DOE O 470.2B	Independent Oversight and Performance Assurance Program	10/31/02
DOE M 151.1-1	Operational Emergency Hazard Material Programs Manual for Facilities and Onsite Activities	10/11/02
DOE M 151.1-2	Emergency Management Program for Transportation Safeguards System Activities	10/11/02
DOE M 151.1-3	Emergency Management Program for Non-Weapons Offsite Transportation Activities	10/11/02
DOE M 470.1-1	Safeguards and Security Awareness Program	10/02/02
DOE M 460.2-1	Radioactive Material Transportation Practices Manual	9/23/02
HDBK-1106-97	Radiological Contamination Control Training for Laboratory Research	9/02
STD-1153-2002	A Graded Approach for Evaluating Radiation Doses to Aquatic and Terrestrial Biota	7/02
DOE O 420.1A	Facility Safety	5/20/02
STD-1150-2002	Quality Assurance Functional Area Qualification Standard	4/02
STD-1151-2002	Facility Representative Functional Area Qualification Standard	4/02
DOE M 473.1-1	Physical Protection Program Manual	3/05/02
STD-1149-2002	Safety and Health Program for DOE Construction Projects	2/02
HDBK-1148-2002	Work Smart Standards User Handbook	2/02
STD-1105-2002	Radiological Training for Tritium Facilities	2/02
STD-1020-2002	Natural Phenomena Hazards Design and Evaluation Criteria for Department of Energy Facilities	1/02
STD-1156-2002	Environmental Compliance Functional Area Qualification Standard	10/02
STD-3011-2002	Guidance for the Preparation of Basis for Interim Operations (BIO) Document	12/03/02
STD-1158-2002	Self-Assessment Standard for DOE Contractor Criticality Safety Programs	11/02
DOE O 473.1	Physical Protection Program	12/23/02

Table A.3 – Descriptions of Department Orders and Safety Directives "of Interest" to the Board

Series 100—Leadership/Management/Planning
O151.1A, *Comprehensive Emergency Management System* Establishes policy and assigns and describes roles and responsibilities for the DOE Emergency Management System. The Emergency Management System provides the framework for development, coordination, control, and direction of all emergency planning, preparedness, readiness assurance, response, and recovery actions.
Series 200—Information and Leadership
O210.1, Chg 2, *Performance Indicators and Analysis of Operations Information* Identifies, monitors, and analyzes data that measures the ES&H performance of facilities, programs, and organizations. The data is to be used to demonstrate improving or deteriorating performance relative to identified goals and, in conjunction with a program to analyze and correlate data, as a means to suggest further improvement through the identification of good practices and lessons learned.
O225.1A, *Accident Investigations* Prescribes requirements and responsibilities related to the Department's accident investigation program. It provides an organized and proven methodology for effectively and efficiently conducting Type A and Type B accident investigations.
O231.1, Chg 2, *Environment, Safety, and Health Reporting* Ensures collection and reporting of information on environment, safety and health that is required by law or regulation to be collected, or that is essential for evaluating DOE operations and identifying opportunities for improvement needed for planning purposes within the DOE.
O232.1A, *Occurrence Reporting and Processing of Operational Information* Establishes and maintains a system for reporting operations information related to DOE-owned and -leased facilities and processing that information to identify the root causes of Unusual, Off-Normal, and Emergency Occurrences and provide for appropriate corrective action. This system performs timely identification, categorization, notification, and reporting to DOE management of reportable occurrences and evaluation of root causes and corrective actions.
O251.1A, *Directives System* Establishes requirements for the development, coordination, and review of certain internal Directives System documents (Policies, Orders, Notices, Manuals, and Guides.) This ensures issuance of clear, succinct, cost-effective, and outcome-oriented Directives System documents; early involvement of affected organizations and timely development, coordination, and issuance of Directives System documents.
O252.1, *Technical Standards Program* Promotes the use of voluntary consensus standards by the DOE, provides DOE with the means to develop needed technical standards, and manages overall technical standards information, activities, issues, and interactions. DOE Technical Standards cover performance-based or design-specific technical specifications and related management systems practices, and span classification of components; delineation of procedures; specification of materials, products, performance, design, or operations; and definitions of terms or measurements of quality and quantity in describing materials, products, systems, services, or practices.

Table A.3 provides a brief description of the orders and departmental safety directives identified as "of interest" to the Board.

Table A.3 – Department Orders and Safety Directives Descriptions, Continued

Series 300—Human Resources
O360.1B, *Federal Employee Training* Establishes requirements and assigns responsibilities for DOE Federal employee training, education, and development under the Government Employees Training Act of 1958. The objective is to improve workforce performance related to the mission and strategic objectives of DOE through a cyclical program of training planning, needs analysis and assessment, design, development, implementation, and evaluation.
Series 400—Work Process
O413.3, *Program and Project Management for the Acquisition of Capital Assets* Provides DOE, including NNSA, project management direction for the acquisition of capital assets that are delivered on schedule, within budget, and fully capable of meeting mission performance and environmental, safety, and health standards.
O414.1A, *Quality Assurance* Establishes an effective management system (i.e. QA programs) using the performance requirements of this Order, coupled with technical standards where appropriate. Ensures that senior management provides planning, organization, direction, control, and support to achieve quality assurance objectives.
O420.1A, *Facility Safety* Establishes facility safety requirements for DOE and NNSA.
G421.1-2, *Implementation Guide for use in Developing Documented Safety Analyses to meet Subpart B of 10 CFR 830* Supports implementation of Title 10 Code of CFR Part 830, Subpart B, "Safety Basis Requirements," and provides guidance in meeting the provisions for DSAs defined in that subpart. Describes the analytical methods, documentation requirements, and safety commitments that go into the development of a comprehensive safety basis and DSA.
G423.1-1, *Implementation Guide for use in Developing Technical Safety Requirements* Provides guidance in identifying important safety parameters and developing the content for the Technical Safety Requirements that are requires contractors to prepare and submit Technical Safety Requirements for DOE approval (10 CFR 830.205).
G424.1-1, *Implementation Guide for use in Addressing Unreviewed Safety Question Requirements* This Guide provides information to assist in the implementation and interpretation of Title 10 CFR Part 830.203, "Unreviewed Safety Question Process," of the Nuclear Safety Management Rules for applicable nuclear facilities owned or operated by the DOE, including the NNSA. The purpose of the USQ process is to alert DOE of events, conditions, or actions that affect the DOE-approved safety basis of the facility or operation and ensure appropriate DOE line management action.
O425.1B, *Startup and Restart of Nuclear Facilities* Establishes the requirements for the DOE, including the NNSA, for startup of new nuclear facilities and for the restart of existing nuclear facilities that have been shut down. The requirements specify a readiness review process that must, in all cases, demonstrate that it is safe to start (or restart) the applicable facility.
O430.1A, *Life Cycle Asset Management* Provides requirements for planning, acquiring, operating, maintaining, and disposing of physical assets as valuable national resources.

Table A.3 – Department Orders and Safety Directives Descriptions, Continued

O433.1, *Maintenance Management Program for DOE Nuclear Facilities* Defines the program for the management of cost-effective maintenance of DOE nuclear facilities.
O435.1, Chg 1, *Radioactive Waste Management* Ensures that all DOE radioactive waste is managed in a manner that is protective of worker and public health and safety, and the environment.
O440.1A, *Worker Protection Management for DOE Federal and Contractor Employees* Establishes the framework for an effective worker protection program that will reduce or prevent injuries, illnesses, and accidental losses by providing DOE Federal and contractor workers with a safe and healthful workplace. The order requires DOE to implement a written worker protection program and establish written policy, goals, and objectives for the worker protection program.
O442.1A, *Department of Energy Employee Concerns Program* Ensures employee concerns related to such issues as the environment, safety, health, and management of DOE and NNSA programs and facilities are addressed through prompt identification, reporting, and resolution of employee concerns regarding DOE facilities or operations in a manner that provides the highest degree of safe operations; free and open expression of employee concerns that results in an independent, objective evaluation; and supplementation of existing processes with an independent avenue for reporting concerns.
O451.1B, *National Environmental Policy Act Compliance Program* Establishes DOE internal requirements and responsibilities for implementing the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality Regulations Implementing the Procedural Provisions of NEPA 40 CFR Parts 1500-1508), and the DOE NEPA Implementing Procedures (10 CFR Part 1021). The goal is to ensure efficient and effective implementation of DOE's NEPA responsibilities through teamwork while controlling the costs and time for the NEPA process.
O452.1B, *Nuclear Explosive and Weapon Surety Program (NEWS)* Establishes requirements and responsibilities for the DOE NEWS Program. This is done to ensure adequate safety, security, and control of nuclear explosives and nuclear weapons; maintain a formal, comprehensive, and systematic NEWS Program to protect the public and worker health and safety and the environment while supporting national defense requirements; establish nuclear explosive surety standards, nuclear weapon design surety requirements, and appraisal requirements for the NEWS Program; and address requirements and responsibilities for planned nuclear explosive operations.
O452.2B, *Safety of Nuclear Explosive Operations* Establishes requirements and responsibilities for ensuring the safety of both routine and planned DOE nuclear explosive operations and associated activities and facilities, address the safety of nuclear explosive operations in nuclear explosive safety and ES&H; and address requirements and responsibilities for planned nuclear explosive operations.
O460.1A, *Packaging and Transportation Safety* Prescribes a comprehensive safety program for the DOE and DOE-contractor packaging and transportation operations.
O460.2, Chg 1, *Departmental Materials Transportation and Packaging Management* Establishes DOE policies and requirements to supplement applicable laws, rules, regulations, and other DOE Orders for materials transportation and packaging operations.
O461.1, *Packaging and Transfer or Transportation of Materials of National Security Interest* Establishes requirements and responsibilities for the Transportation Safeguards System packaging and transportation and onsite transfer of nuclear explosives, nuclear components, Naval nuclear fuel elements, Category I and Category II special nuclear materials, special assemblies, and other materials of national security interest.

Table A.3 – Department Orders and Safety Directives Descriptions, Continued

O470.2B, *Independent Oversight and Performance Assurance Program* Enhances the DOE safeguards and security, cyber security, and emergency management programs and to provide DOE and contractor managers, Congress, and other stakeholders with an independent evaluation of the effectiveness of DOE policy and line management performance in safeguards and security, cyber security, emergency management, and other critical functions, as directed by the Secretary.
O474.1A, *Control and Accountability of Nuclear Materials* Prescribes DOE requirements, including those for the NNSA, for nuclear material control and accountability for DOE-owned and -leased facilities and DOE-owned nuclear materials at other facilities that are exempt from licensing by the Nuclear Regulatory Commission.
Series 3700—Personnel Relations and Services
O3790.1B, *Federal Employee Occupational Safety and Health Program* Establishes policy for the implementation and administration processes to ensure places and conditions of employment that are as free as possible from recognized hazards that cause or are likely to cause illness or physical harm. Provides assurance that employees and employee representatives shall have the opportunity to participate in the Federal Employee Occupational Safety and Health Program, and establishes programs in safety and health training for all levels of Federal employees.
Series 4700—Project Management
O4700.1, Chg 1, *Project Management System* Establishes DOE project management system and provides implementation instructions, formats, and procedures, and sets forth the principles and requirements, which govern the development, approval, and execution of DOE's outlay program acquisitions as embodied in the Project Management System.
O4700.4, *Project Manager Certification* Establishes certification requirements for DOE project managers at identifiable skill levels and to encourage development of project managers.
Series 5400—Environmental Quality and Impact
O5400.1, Chg 1, *General Environmental Protection Program* Establishes environmental protection program requirements, authorities, and responsibilities for DOE operations for assuring compliance with applicable Federal, state, and local environmental protection requirements that are generally established in DOE 5480.1B.
O5400.5, Chg 2, *Radiation Protection of the Public and the Environment* Establishes the standards and requirements for operations of the DOE and DOE contractors with respect to operating its facilities and conduct its activities so that (a) radiation exposures to members of the public are maintained within the established limits and to control radioactive contamination through the management of real and personal property and (b) the environment is protected from radioactive contamination to the extent practical.
O5480.4, Chg 4, *Environment Protection, Safety, and Health Protection Standards* Specifies requirements for the application of the mandatory ES&H standards applicable to all DOE and DOE contractor operations and provides a listing of reference ES&H standards; and identifies the sources of the mandatory and reference ES&H standards.
O5480.19, Chg 2, *Conduct of Operations Requirements for DOE Facilities* Provides requirements and guidelines for Departmental Elements, including the NNSA, to use in developing directives, plans, and/or procedures relating to the conduct of operations at DOE facilities. The implementation of these requirements and guidelines should result in improved quality and uniformity of operations.

Table A.3 – Department Orders and Safety Directives Descriptions, Continued

O5480.20A, *Personnel Selection, Qualification, and Training Requirements for DOE Nuclear Facilities* Establishes requirements for the development and implementation of contractor-administered training programs that provide consistent and effective training for personnel at DOE nuclear facilities and contains the minimum requirements that must be included in training and qualification programs.
O5480.30, Chg 1, *Nuclear Reactor Safety Design Criteria* Establishes requirements for the design of all safety class structures, systems and components of DOE nuclear reactor facilities. Each covered DOE contractor use these criteria in the review and development of existing and proposed directives, plans, or procedures relating to the design of new and existing DOE nuclear reactor facilities.
Series 5500—Emergency Preparedness
O5530.1A, Chg 1, *Accident Response Group* Establishes DOE policy for maintaining a continuing capability to provide immediate response to peacetime accidents and significant incidents involving nuclear weapons or radiological nuclear weapon components.
O5530.2, *Nuclear Emergency Search Team* Establishes DOE policy to establish and maintain capabilities for technical response to potential and actual threats and incidents as may be requested by the Lead Federal Agency.
O5530.3, Chg 1, *Radiological Assistance Program* Establishes DOE policy, procedures, authorities, and responsibilities for its Radiological Assistance Program. Calls for establishing and maintaining response plans and resources to provide radiological assistance to other Federal agencies, State, local, and tribal governments, and private groups requesting such assistance.
O5530.4, *Aerial Measuring System* Establishes requirements to maintain a capability to provide regularly scheduled aerial remote sensing surveys to provide baseline radiological, multi-spectral, and other remotely sensed data; early warning of environmental impacts of operations; and total site surveillance. In addition, capability will be maintained to provide urgent and emergency aerial assessment of radiological conditions in the vicinity of peacetime radiological incidents or accidents.
Series 5600—Defense Programs
O5600.1, *Management of the Department of Energy Weapon Program and Weapon Complex* Provides the steps to assure the effective management of the weapon complex and the weapon program, assure the continuing capability of the weapon complex to carry out its primary mission, to conduct the weapon program, and to encourage the effective use of the capabilities and resources of the weapon complex in support of DOE's nonweapon responsibilities or other programs of national interest, subject to the need to assure that such programs do not adversely impact the weapon program.
O5632.1C, *Protection and Control of Safeguards and Security Interests* Establishes policy, responsibilities, and authorities for the protection and control of safeguards and security interests (e.g., special nuclear material, vital equipment, classified matter, property, facilities, and unclassified irradiated reactor fuel in transit).

Table A.3 – Department Orders and Safety Directives Descriptions, Continued

O5660.1B, *Management of Nuclear Materials* Establishes requirements and procedures for the management of nuclear materials within the DOE in order to implement a comprehensive nuclear materials management program to conserve valuable nuclear material resources; distribute nuclear materials needed for DOE and other programs for research, development, and other purposes; optimize nuclear materials production, processing, and inventory management operations; and conduct studies and prepare plans for the future use and disposition of nuclear materials including operation of DOE nuclear materials production, processing, and storage facilities.
Related Documents Setting Forth Safety-Related Requirements
N203.1, *Software Quality Assurance* Defines requirements and responsibilities for software quality assurance within the DOE to ensure that all software owned or maintained by DOE is subjected to formal quality assurance; all DOE software engineering follows identified standards and best practices throughout the project and product lifecycle; due to the spectrum of requirements, the degree of SQA is risk-based; and personnel are capable of correctly developing, using, and managing software.
P410.1A, *Promulgating Nuclear Safety Requirements* Establishes policy for use of notice and comment rulemaking to promulgate requirements on nuclear safety issues currently covered by DOE Orders, and issuance of notices of proposed rulemaking with respect to important nuclear safety requirements in existing DOE Orders as expeditiously as practicable. The use of notice and comment rulemaking gives members of the public the opportunity for meaningful participation in the development of nuclear safety requirements.
P411.1, *Safety Management Functions, Responsibilities and Authorities* Defines the DOE safety management functions, responsibilities and authorities to ensure that work is performed safely and efficiently. Develops and implements requirements and standards that are necessary to provide reasonable assurance that workers, the public, and the environment are adequately protected; and defines essential safety management functions and establish unambiguous DOE roles, responsibilities, and authorities for executing them to accomplish the authorized work.
P426.1, *Federal Technical Capability for Defense Nuclear Facilities* The FTCP provides for the recruitment, deployment, development, and retention of Federal personnel with the demonstrated technical capability to safely accomplish the Department's missions and responsibilities. It is institutionalized through DOE directives to establish the program's objective, guiding principles, and functions. The program is specifically applicable to those offices and organizations performing functions related to the safe operation of defense nuclear facilities.
P450.1, *Environment, Safety, and Health Policy for the Department of Energy Complex* Delineates guiding principles to promote daily excellence in the protection of the worker, the public, and the environment. Guiding principles include personal commitment, mutual trust, open communications, continuous improvement and full involvement of all interested parties.
P450.2A, *Identifying, Implementing, and Complying with Environment, Safety, and Health Requirements* Establishes a policy for an integrated review of safety requirements for ensuring adequate protection for workers, the public and the environment. Establishes requirements for developing appropriate set of ES&H requirements to ensure adequate protection.

Table A.3 – Department Orders and Safety Directives Descriptions, Continued

P450.3, *Authorizing Use of the Necessary and Sufficient Process for Standards-Based Environment, Safety and Health* Establishes the Closure Process for Necessary and Sufficient Sets of Standards as one means of addressing the selection of ES&H standards. This will provide adequate protection of the workers, the public and the environment and will increase stakeholder trust and confidence. This does not apply to defense nuclear facilities. The Department will consult with the Board on the Closure Process for Necessary and Sufficient Sets of Standards.
P450.4, *Safety Management System Policy* Provides a formal, organized process whereby people plan, perform, assess, and improve the safe conduct of work. The Safety Management System is institutionalized through DOE directives and contracts to establish the Department-wide safety management objective, guiding principles, and functions. The system encompasses all levels of activities and documentation related to safety management throughout the DOE complex.
P450.5, *Line Environment, Safety and Health Oversight* Sets forth the Department's expectations for DOE line management ES&H oversight and for the use of contractor self-assessment programs as the cornerstone for this oversight. An effective and efficient oversight program can be realized when a vigorous contractor self-assessment program is in place, similar to those used in successful companies. DOE line oversight and contractor self-assessments together ensure that field elements and contractors are adequately implementing the DOE Safety Management System.
P450.6, *Secretarial Policy Statement on Environment, Safety, and Health* Rearticulates general policy for protection of public and worker health and safety, and the environment. Emphases implementation of ISM to prevent accidents, openness to feedback on safety concerns, and a goal of "zero tolerance" for serious accidents.
10CFR820, *Procedural Rules for DOE Nuclear Activities* Sets forth the procedures to govern the conduct of persons involved in DOE nuclear activities and, in particular, to achieve compliance with the DOE Nuclear Safety Requirements by all persons subject to those requirements.
10 CFR 830, Subpart A, *Quality Assurance Requirements* Sets forth rules for contractors responsible for a DOE nuclear facility to conduct work in accordance with the QA criteria; develop and submit for approval by DOE a QA program for the work; and implement the QA program, as approved and modified by DOE.
10 CFR 830, Subpart B, *Safety Basis Requirements* Sets forth rules describing how responsible contractors must prepare a documented safety analysis that in part, describes the facility, activities, and operations; provides systematic identification of hazards; evaluates normal, abnormal, and accident conditions; and derives hazard controls to provide an adequate level of safety to the public, workers and the environment.
10 CFR 834, *Radiation Protection of the Public and the Environment* Establishes requirements that govern activities conducted by, or for, the DOE that could result in the release of radioactive material, the exposure of member of the public to ionizing radiation, or contamination of the environment with radionuclide from DOE activities. Establishes public dose limits intended to be applied to doses to members of the general public from routine DOE operations and operational occurrences.
10 CFR 835, *Occupational Radiation Protection* The rules in this part establish radiation protection standards, limits, and program requirements for protecting individuals from ionizing radiation resulting from the conduct of DOE activities.

Table A.3 – Department Orders and Safety Directives Descriptions, Continued

48 CFR 970.5204-2, *Laws, Regulations, and DOE Directives* This acquisition regulation requires that in performing work under this contract, the contractor shall comply with the requirements of applicable Federal, State, and local laws and regulations (including DOE regulations), unless relief has been granted in writing by the appropriate regulatory agency. Regardless of the performer of the work, the contractor is responsible for compliance with the requirements of this clause. The contractor is responsible for flowing down the requirements of this clause to subcontracts at any tier to the extent necessary.
48 CFR 970.5215-3, *Conditional Payment of Fee, Profit, or Incentives* This acquisition regulation requires that in order for the contractor to receive all otherwise earned fee, fixed fee, profit, or share of cost savings under the contract in an evaluation period, the Contractor must meet the minimum requirements as described.
48 CFR 970.5223-1, *Integration of Environment, Safety, and Health Into Work Planning and Execution* This acquisition regulation requires that the contractor shall perform work safely, in a manner that ensures adequate protection for employees, the public, and the environment, and shall be accountable for the safe performance of work. The contractor shall exercise a degree of care commensurate with the work and the associated hazards. The contractor shall ensure that management of ES&H functions and activities becomes an integral but visible part of the contractor's work planning and execution processes.

Appendix B

Site Visits Supported by the Department in 2002

The Department supported 135 visits from the Board during 2002.

Albuquerque

- On January 23-25, the Board's staff visited **Albuquerque** to attend the W78 A-11 incident meeting and observe the latest facility safety modifications in Technical Area 5.
- On January 28-February 1, 2002, the Board's staff visited **Albuquerque** to attend a Safety Analysis Workshop and Energy Facility Contractors Group Meeting.
- On May 20-22, 2002, the Board's staff visited **Albuquerque** to observe the Annual Department of Energy Nuclear Explosive Safety Study conference at the SNL.
- On March 25-29, 2002, the Board's staff visited the **Albuquerque Operations Office** to observe the enhanced surveillance campaign 2002 review.

Carlsbad

- On May 7-10, 2002, the Board's staff visited the **Carlsbad Field Office** to review the overall status of the WIPP.
- On August 19-23, 2002, the Board's staff visited the **Waste Isolation Pilot Plant** to observe the remote handling of the TRU waste disposal system.

Fernald

- On April 15-17, 2002, the Board's staff visited the **Fernald Environmental Management Project** to review the work controls program.
- On June 24-27, 2002, the Board's staff visited the **Fernald Field Office** to review the silos project and the oversight programs of the Department and its contractors.
- On October 28-30, 2002, the Board's staff visited **Fernald** to observe the contractor and the Department's Readiness Review for the startup of the radon control system.
- On November 11-15, 2002, the Board's staff visited **Fernald** to review the Department's ORR for startup of the Radon Control System.

Hanford Site

- On February 19-22, 2002, the Board's staff visited the **Hanford Site** to review ongoing tank integrity and tank retrieval issues, and observe the quarterly integrated WTP design review.
- On February 25- March 1, 2002, the Board's staff visited the **Hanford Site** to review the independent review of Hanford SNF program, specifically the K-Basin project baseline change request for implementing new equipment and operations to achieve processing improvements.
- On March 21, 2002, the Board's staff visited **Hanford** to review the HLW and LAW facilities structural design.
- On April 8-12, 2002, the Board's staff visited **Hanford** to review the SNF Program.
- On April 15-18, 2002, the Board's staff visited **Hanford** to review Tank Farm activities.
- On April 29-May 3, 2002, the Board's staff visited **Hanford** to review the WTP.
- On May 21-23, 2002, the Board visited **Hanford** to review the design basis for Vitrification Facility.
- On June 24-27, 2002, the Board's staff visited **Hanford** to review the WTP ventilation systems.
- On July 8-12, 2002, the Board's staff visited **Hanford** to review the WTP electrical distribution system.
- On July 22-25, 2002, the Board visited **Hanford** to tour the site, and to review activity at the WTP, the SNF, K-East Basin, PFP, and the tank farms.

Waste Treatment cleanup at Hanford's Office of River Protection

- On July 22-26, 2002, the Board's staff visited **Hanford** to support the Board's visit and take additional tours.
- On July 30-August 1, 2002, the Board's staff visited **Hanford** to review the Preliminary Safety Analysis Report and the accident analysis for the WTP or Pretreatment Plant.
- On August 19-23, 2002, the Board's staff visited **Hanford** to review the changes in the tank farms safety basis, the implementation of the 10 CFR 830, tank integrity, operational topics, WTP civil-structural design, and tour the facilities.
- On September 9-12, 2002 the Board's staff visited **Hanford** to review the software and design control QA reviews.
- On September 17-19, 2002, the Board's staff visited **Hanford** to review WTP, HLW. LAW and pretreatment facilities and walkdown on aging facilities.
- On September 30-October 10, 2002, the Board's staff visited **Hanford** to observe the contractor ORR at the K-Basins fuel transfer facility.
- On October 28-November 1, 2002, the Board's staff visited **Hanford** to review the 2000-2 system engineer activities related to the phase II implementation.
- On November 4-8, 2002, the Board's staff visited **Hanford** to review the electrical, and instrumentation and control (I&C) systems at the WTP.
- On November 6-18, 2002, the Board's staff visited **Hanford** to review the Department's ORR for K-Basins Fuel Transfer system.
- On November 18-20, 2002, the Board's staff visited **Hanford** to review the WTP civil-structural design.
- On December 9-13, 2002, the Board's staff visited **Hanford** to review the tank farms safety basis development effort.
- On December 16-20, 2002, the Board's staff visited **Hanford** to review the SNF Program.

Idaho

- On March 4-8, 2002, the Board's staff visited the **Idaho** to review the Department's assessment of the annual ISMS review process and tour the Radioactive Waste Management Complex and Advanced Mixed Waste Treatment Project.
- On June 3-7, 2002, the Board's staff visited the **Idaho National Engineering and Environmental Laboratory** to review the Radioactive and Mixed Waste Center's current and planned activities and to discuss the performance management plan for accelerated closure of Environmental Management facilities.
- On September 9-13, 2002, the Board's staff visited the **Idaho National Engineering and Environmental Laboratory** to review the CATS lessons learned program, status of Safety Analysis Reports, updates on the INTEC, Radioactive Waste Management Complex, Advanced Mixed Waste Treatment Project, and a visit to the Argonne National Laboratory - West.
- On December 9-12, 2002, the Board visited the **Idaho National Engineering and Environmental Laboratory** for a briefing on high-level and sodium-bearing wastes, SNF and TRU waste.
- On December 9-12, 2002, the Board's staff visited the **Idaho National Engineering and Environmental Laboratory** to review the examination of waste and fuel handling activities

and the drum retrieval at the Advanced Mixed Waste Treatment Project.

Lawrence Livermore National Laboratory

- On January 22-24, 2002, the Board visited the **Lawrence Livermore National Laboratory.**
- On January 22-24, 2002, the Board's staff visited the **Lawrence Livermore National Laboratory** to support the Board's trip.
- On February 19-22, 2002, the Board's staff visited the L**awrence Livermore National Laboratory** to review the building 251 project.
- On March 25-28, 2002, the Board's staff visited the **Lawrence Livermore National Laboratory** to review the electrical safety systems at Building 332 and tour the DWTF.
- On May 6-9, 2002, the Board's staff visited the **Lawrence Livermore National Laboratory** to do a follow up review on Building 251.
- On May 28-31, 2002, the Board's staff visited the **Lawrence Livermore National Laboratory** to review the LLNL Site Specific USQ training course, the USQ program, and tour the tritium facility.
- On June 4-6, 2002, the Board's staff visited the **Lawrence Livermore National Laboratory** to review the seismic issues associated with the WTP.
- On September 9-12, 2002, the Board's staff visited the **Lawrence Livermore National Laboratory** to review the DWTF complex.
- On September 25-27, 2002, the Board visited the **Lawrence Livermore National Laboratory** for a Public Hearing.
- On September 25-27, 2002, the Board's staff visited the **Lawrence Livermore National Laboratory** to support the Board's trip.
- On October 21-24, 2002, the Board's staff visited the **Lawrence Livermore National Laboratory** to review the process for developing weapons responses.
- On November 4, 2002, the Board's staff visited the **Lawrence Livermore National Laboratory** to review weapons response information.
- On November 12-15, 2002, the Board's staff visited the **Lawrence Livermore National Laboratory** to observe the LLNL building 332 EPS institutional review.

Los Alamos National Laboratory

- On January 17-18, 2002, the Board's staff visited the **Los Alamos National Laboratory** to review the Test Area-55 fire water system.
- On January 29-February 1, 2002, the Board's staff visited the **Los Alamos National Laboratory** to review Test Area 18 security enhancement project and mission relocation project.
- On February 25- March 1, 2002, the Board's staff visited the **Los Alamos National Laboratory** to review the chemical management program and recent Test Area 54 incident.
- On March 4-8, 2002, the Board's staff visited the **Los Alamos National Laboratory** to review implementation activities related to 2000-1 inactive nuclear material, and the aqueous plutonium-238 scrap recovery line.
- On April 8-11, 2002, the Board's staff visited the **Los Alamos National Laboratory** for a brief on 2000-2.
- On April 15-17, 2002, the Board's staff visited **Los Alamos National Laboratory** to review tritium activities.
- On May 6-9, 2002, the Board's staff visited **Los Alamos National Laboratory** to review the Authorization Basis of Technical Area-18.
- On May 20-24, 2002, the Board's staff visited **Los Alamos National Laboratory** to review the lightning protection of the site.
- On July 15-19, 2002, the Board's staff visited **Los Alamos National**

On October 24, the DOE announced that the final shipment of TRU waste had been safely moved out of Idaho. The 3,100 cubic meters of waste arrived at the Waste Isolation Pilot Plant two months ahead of schedule.

Laboratory to support the Board's visit.

- On July 16-19, 2002, the Board visited **Los Alamos National Laboratory** for a tour of the facilities, a detailed technical discussion, and an overview of major projects.
- On September 16-18, 2002, the Board's staff visited **Los Alamos National Laboratory** to observe a lightning protection review.
- On September 23-26, 2002, the Board's staff visited **Los Alamos National Laboratory** to review activities related to the 2000-2 implementation plan and to review the bioassay and internal dosimetry process.
- On October 14-18, 2002, the Board's staff visited **Los Alamos National Laboratory** to review QA issues and to observe in the Dynex blue ribbon panel review of the 30% Dynex Hazard Analysis Report.
- On November 12-15, 2002, the Board's staff visited **Los Alamos National Laboratory** to review the design and construction of the Chemistry and Metallurgy Research Replacement Building, ground motion, Technical Area-18 flood retention structure.
- On December 3-6, 2002, the Board's staff visited **Los Alamos National Laboratory** to review the design and construction of the Chemistry and Metallurgy Research Replacement Building, ground motion analyses, and the Technical Area-18 flood retention structure.
- On December 16-18, 2002, the Board's staff visited **Los Alamos National Laboratory** to observe the meeting on Technical Area-18 mission relocation.

Miamisburg

- On March 18-20, 2002, the Board's staff visited the **Miamisburg Environmental Management Project** to review the integrated work control program.

Nevada Test Site

- On January 28-30, 2002, the Board's staff visited the **Nevada Test Site** to review as-built and Atlas activities.
- On February 11-15, 2002, the Board's staff visited the **Nevada Test Site** to review the final assessment of readiness and execution of subcritical experiment "vito."
- On February 27-March 1, 2002, the Board's staff visited the **Nevada Test Site** to observe a containment evaluation panel meeting.
- On April 2-5, 2002, the Board visited the **Nevada Test Site** for a briefing on defense nuclear facility activities and support to those facilities, and to visit selected facilities.
- On April 2-5, 2002, the Board's staff visited the **Nevada Test Site** to support the Board's visit.
- On April 23-25, 2002, the Board's staff visited the **Nevada Test Site** to observe the containment review panel.
- On June 24-27, 2002, the Board's staff visited the **Nevada Test Site** to observe the Damaged Nuclear Weapons Disposition Focus Group Meeting.
- On August 5-9, 2002, the Board's staff visited the **Nevada Test Site** to review and observe the Damaged Nuclear Weapon drill.
- On August 12-16, 2002, the Board's staff visited the **Nevada Test Site** to review and observe the Damaged Nuclear Weapon drill.
- On October 21-24, 2002, the Board's staff visited the **Nevada Test Site** to review the Tri-Lab Work Smart Standards.
- On November 18-22, 2002, the Board's staff visited the **Nevada Test Site** to review the Device Assembly Facility draft DSA and the TRU storage readiness assessment.

Oak Ridge

- On February 4, 2002, the Board's staff visited **Oak Ridge** to review startup preparations and related revised criticality safety documentation for waste at Foster Wheeler Environmental Corporations.
- On July 16-18, 2002, the Board's staff visited **Oak Ridge** to observe the mechanical testing of the hydraulic slucing pumps.
- On November 20-22, 2002, the Board's staff visited **Oak Ridge** to observe the contractor ORR preparations and will tour the completed supernatant processing facilities at the Foster-Wheeler Environmental Corporation's Melton Valley TRU waste project facility.
- On December 17-19, 2002, the Board's staff visited **Oak Ridge** to observe the contractor ORR preparations and tour the completed supernatant processing facilities at the Foster-Wheeler Environmental Corporation's TRU Waste Project Facility.

Pantex Plant

- On January 22-25, 2002, the Board's staff visited the **Pantex Plant** to review control classification procedures, accident response, and procedure 11.8.
- On January 28-February 1, 2002, the Board's staff visited the **Pantex Plant** to review USQ procedures, conduct of operations (procedure compliance), follow-up on Board letter of October 2, 2001, and video tele-conference of October 31, 2001, observe plant operations, and attend standing management meeting.
- On February 5-8, 2002, the Board's staff visited the **Pantex Plant** to review chemical safety program and W79 weapons program propellant safety.
- On February 28-March 1, 2002, the Board's staff visited the **Pantex Plant** to observe operations and the Department's standing management meeting.
- On March 11-15, 2002, the Board's staff visited the **Pantex Plant** to observe W62 walkdown of bay tooling and review Fire Bases for Interim Operations implementation and fire water system.
- On March 25-29, 2002, the Board's staff visited the **Pantex Plant** to observe the Department's ORR and Nonradiological Environmental Surveillance Program for the separation test facility.
- On April 23-25, 2002, the Board's staff visited the **Pantex Plant** to review the Safety Analysis Report module and Authorization Basis upgrade for transportation activities.
- On May 6-10, 2002, the Board's staff visited **Pantex** to review the electrical systems and the lightning protection of the plant.
- On June 25-28, 2002, the Board's staff visited **Pantex** to observe the management team meeting.
- On July 16-17, 2002, the Board's staff visited **Pantex** to review the structural issues of Building 12-64.
- On July 22-26, 2002, the Board's staff visited **Pantex** to review the site's fire protection and emergency preparedness and to observe the W62 step II process review with the new tooling.
- On August 5-8, 2002, the Board's staff visited **Pantex** to review activities related to implementation plan 2000-2.
- On August 15-16, 2002, the Board's staff visited **Pantex** to observe the meeting with NNSA Headquarters, Amarillo Office, and BWXT personnel on activities related to 98-2 implementation plan.
- On September 4-6, 2002, the Board's staff visited **Pantex** to observe the standing management team meeting and the Building 83 milestone I meeting.
- On December 9-13, 2002, the Board's staff visited **Pantex** to review the NNSA's Fire Bases for Interim Operations Readiness Assessment.

Rocky Flats

- On February 4-8, 2002, the Board's staff visited **Rocky Flats** to review operational assessment of radiological work.
- On February 19-21, 2002, the Board visited **Rocky Flats.**
- On February 19-22, 2002, the Board's staff visited **Rocky Flats** to observe phase II assessment of building 371 and support the Board's site visit.
- On June 5-7, 2002, the Board's staff visited the **Rocky Flats Environmental Technology Site** to review the impure plutonium oxide moisture measurements.
- On December 9-11, 2002, the Board's staff visited the **Rocky Flats Environmental Technology Site** to review site operations.

Sandia National Laboratory

- On July 15-19, 2002, the Board's staff visited the **Sandia National Laboratory** and the **Los Alamos National Laboratory** to review the safety standards for major projects.

Savannah River

- On January 7-11, 2002, the Board's staff visited the **Savannah River Site** to attend a technical meeting on potential revisions to DOE-STD-3013, and review the HLW tank farm operations and maintenance, the design of the high-enriched uranium blend-down project, and the DWPF melter replacement planning.
- On January 22-24, 2002, the Board's staff visited the **Savannah River Site** to review Americum/Curium disposal and HLW salt processing.
- On February 4-6, 2002, the Board's staff visited the **Savannah River Site** to review implementation activities related to 2000-2.
- On February 26-March 1, 2002, the Board's staff visited the **Savannah River Site** to review the Tritium Consolidation Project, TEF, and USQ implementation procedure.
- On March 19-22, 2002, the Board's staff visited the **Savannah River Site** to review the HB-Line Phase II operations and maintenance
- On March 25-28, 2002, the Board's staff visited the **Savannah River Site** to review vapor phase corrosion at the HLW storage tanks and review the Safety Analysis Report at the HLW tank farm.
- On May 7-9, 2002, the Board's staff visited the **Savannah River Site** to review the old HB-Line.
- On May 20-24, 2002, the Board's staff visited the **Savannah River Site** to review the HLW cleanup reform initiative.
- On May 28-31, 2002, the Board's staff visited the **Savannah River Site** to review the high enriched uranium blend down project.
- On June 17-19, 2002, the Board's staff visited the **Savannah River Site** to review the 235F Confinement.
- On August 12-15, 2002, the Board's staff visited the **Savannah River Site** to review the HLW program, the vapor space corrosion program, and ultrasonic testing inspection techniques.
- On August 19-23, 2002, the Board's staff visited the **Savannah River Site** to review the ventilation system at Building 235-F and discuss the safety analysis of the HLW tank farm.
- On September 16-20, 2002, the Board's staff visited the **Savannah River Site** to review activities related to the development of alternative technologies for the removal of cesium from salt wastes relative to the 2001-1 implementation plan and tours.
- On September 24-26, 2002, the Board's staff visited the **Savannah River Site** to observe the meeting on the Pit Disassembly and Conversion Facility (PDCF) 90% Title I design.
- On October 8-10, 2002, the Board's staff visited the **Savannah River Site**

to review activities related to the 2000-1 implementation plan and the FB-Line packaging and stabilization project.

- On October 17-18, 2002, the Board's staff visited the **Savannah River Site** to observe a meeting regarding the Pit Disassembly and Conversion Facility 90% title I seismic design.
- On November 12-15, 2002, the Board visited the **Savannah River Site** to receive updates on HLW nuclear materials and NNSA activities and tour several sites.
- On December 2-6, 2002, the Board's staff visited the **Savannah River Site** to observe the High Enriched Uranium blend down Readiness Assessment #2 and review the Tritium Consolidation Project/TEF status.

Y-12

- On January 7-10, 2002, the Board's staff visited **Y-12** to review the highly enriched uranium storage facility.
- On February 11-14, 2002, the Board's staff visited the **Y-12 Site** to review the material disposition program.
- On March 4-8, 2002, the Board's staff visited the **Y-12 Site** to review preparations for startup of the Enriched Uranium Operations wet chemistry process.
- On April 8-10, 2002, the Board's staff visited the **Y-12 Site Office** to review changes in screening process of accident scenarios, and to review Y-12 process hazards and accident analysis.
- On April 15-17, 2002, the Board's staff visited the **Y-12 Site Office** to observe the training for revisions to accident analysis methodology being used at the site and the HEUMF.
- On May 7-9, 2002, the Board's staff visited the **Y-12 Area Office** to observe the HEUMF.
- On June 11-14, 2002, the Board's staff visited the **Y-12 Area Office** for a follow-up review of the Y-12 maintenance program.
- On June 25, 2002, the **Y-12 Area Office** briefed the Board on the status of the site's maintenance program.
- On July 9-11, 2002, the Board's staff visited the **Y-12 Site Office** to review the fire protection and alternative technologies.
- On July 23-25, 2002, the Board's staff visited the **Y-12 Area Office** to review the activities related to the 2000-2 implementation plan and other site activities.
- On July 29-August 1, 2002, the Board's staff visited the **Y-12 Area Office** to observe the systems thinking review of the EUO B-1 Wing Fire Sprinklers.
- On August 12-16, 2002, the Board's staff visited the **Y-12 Area Office** to observe the ISM review.
- On August 19-23, 2002, the Board's staff visited the **Y-12 Area Office** to observe the contractor's ORR for Enriched Uranium Operations Wet Chemistry.
- On November 4-7, 2002, the Board's staff visited the **Y-12 Site Office** to review the HEUMF.

Appendix C

Key Correspondence Between the Department and the Board in 2002

The Department received 75 letters from the Board in 2002.

FROM THE BOARD TO THE DEPARTMENT

January

- On January 15, 2002, the Board sent a letter enclosing a staff issue report on verification of hazard assessment at LLNL.
- On January 18, 2002, the Board sent a letter regarding the late report on ISM at OR and BJC.
- On January 28, 2001, the Board sent a letter regarding revision of the *Nuclear Air Cleaning Handbook.*
- On January 31, 2002, the Board sent a letter responding to the Department's letter dated November 13, 2001 regarding 98-1.

February

- On February 5, 2002, the Board sent a letter enclosing a staff issue report on electrical and instrumentation and control systems at the Hanford PFP.
- On February 15, 2002, the Board sent a letter establishing a 60-day reporting requirement regarding the design of Multi-Canister Overpacks associated with Hanford's SNF Project.
- On February 19, 2002, the Board forwarded its *Twelfth Annual Report to Congress on activities relating to the Department of Energy's Defense Nuclear Facilities during 2001*.
- On February 22, 2002, the Board sent a letter enclosing comments on the Draft DOE QA Improvement Plan and requesting quarterly briefing on QA improvements.
- On February 22, 2002, the Board sent a letter establishing a 60-day reporting requirement on NNSA status in implementing DOE Order 420.1, *Facility Safety*.

March

- On March 4, 2002, the Board sent a letter to the Department regarding HLW processing capability at the SRS relative to the 2001-1 implementation plan.
- On March 7, 2002, the Board sent a letter establishing a 60-day reporting requirement on the issues outlined in the staff report on the preliminary design of the Sandia Underground Reactor Facility (SURF).
- On March 7, 2002, the Board sent a letter establishing a 120-day reporting requirement on the issues outlined in the staff report on depleted uranium storage at SRS.
- On March 7, 2002, the Board sent a letter enclosing a staff issue report on the safety basis and readiness to start operations of the Waste Examination Facility at NTS.
- On March 11, 2002, the Board sent a letter to the Department enclosing a staff issue report on the deactivation of the Heavy Element Facility at LLNL.
- On March 19, 2002, the Board sent a letter to the Department enclosing a staff issue report on the activity-level work planning and feedback and improvement function of ISM at RFETS.
- On March 19, 2002, the Board sent a letter to the Department enclosing a staff issue report on the application of lessons learned from D&D activities.
- On March 25, 2002, the Board sent a letter to the Department enclosing three staff issue reports regarding HEUMF at Y-12.
- On March 25, 2002, the Board sent a letter to the Department enclosing a staff issue report on the disposition of various radioactive and hazardous materials stored at Y-12.

- On March 25, 2002, the Board sent a letter to the Department enclosing a staff issue report on procedural compliance at the Pantex Plant.
- On March 29, 2002, the Board sent a letter to the Department closing 96-1 and requesting a report on the Department's approach for treatment and disposition of the waste in Tank 48 at SRS.
- On March 29, 2002, the Board sent a letter to the Department establishing a 60-day reporting requirement addressing the recommendations cited in this letter regarding HLW operations at SRS.
- On March 29, 2002, the Board sent a letter to the Department regarding technical support from INPO and the Center for Chemical Process Safety.

April

- On April 19, 2002, the Board sent a letter to the Department establishing a 30-day reporting requirement addressing the issues outlined in the staff report regarding the emergency power system at the LLNL Plutonium Facility (Building 332).
- On April 19, 2002, the Board sent a letter to the Department regarding the report, Master Schedule of External NNSA Field Assessments for Current Year 2002.
- On April 23, 2002, the Board sent a letter to the Department establishing a 60-day reporting requirement addressing the deficiencies identified in the enclosed staff report on new plutonium-238 scrap recovery line at the LANL.

May

- On May 8, 2002, the Board sent a letter to the Department regarding the Department's revision to 99-1 implementation plan.
- On May 13, 2002, the Board sent a letter to the Department establishing a 60-day reporting requirement addressing the issues on fire protection for Building 9212, B-1 Wing at Y-12.
- On May 20, 2002, the Board sent a letter to the Department establishing a 120-day reporting requirement addressing the issues on the management of inactive nuclear materials at the Department's Nuclear Weapons Laboratories.
- On May 22, 2002, the Board sent a commendation letter to the Department and the RFETS for completing stabilization and repackaging of more than 100 metric tons of plutonium-bearing residues in relation to implementation plan 94-1.

June

- On June 5, 2002, the Board sent a letter to the Department regarding a staff issue report on the results of a review of the maintenance activities at the Hanford SNF Project.
- On June 7, 2002, the Board sent a letter to the Department commending the Facility Representatives Program and the selection of the 2001 DOE Facility Representative of the Year.
- On June 11, 2002, the Board sent a letter to the Department regarding comments on the In-Service Inspection Plan for HLW Tanks in relation to the 2001-1 implementation plan.
- On June 11, 2002, the Board sent a letter to the Department regarding a staff issue report on the stabilization activities at the PFP relative to 2000-1 implementation plan.
- On June 26, 2002, the Board sent a letter to the Department regarding a staff report on the H-Canyon ventilation system at SRS.
- On June 27, 2002, the Board sent a letter to the Department with a 60-day reporting requirement on the Department's plan for further development of alternative technologies for the removal of cesium from salt wastes at SRS relative to the 2001-1 implementation plan.

July

- On July 11, 2002, the Board sent a letter to the Department acknowledging receipt of the NNSA/

Naval Reactors' report on radiological waste disposal and environmental monitoring, occupational safety and health, and occupational radiation exposure.

- On July 12, 2002, the Board sent a letter to the Department with a 60-day reporting requirement regarding the Department's guidance for verifying thermal stabilization of plutonium oxide relative to DOE Standard 3013-2000, *Stabilization, Packaging, and Storage of Plutonium-Bearing Materials*.
- On July 17, 2002, the Board sent a letter to the Department with a 60-day reporting requirement outlining specific actions to implement the recommendations of the DOE Commission on Fire Safety and Preparedness.
- On July 19, 2002, the Board sent a letter to the Department with a 60-day reporting requirement regarding the seismic detection and alarm system test program and the safety design feature of the TEF at SRS.
- On July 30, 2002, the Board sent a letter to the Department regarding uranium-233 stored at ORNL in relation to the implementation plan 97-1.
- On July 30, 2002, the Board sent a letter to the Department regarding the seismic design of the Pretreatment, LAW, and HLW Facilities of the Hanford WTP.

August

- On August 1, 2002, the Board sent a letter to the Department with a 30-day reporting requirement regarding support by the National Laboratories, the design agencies for nuclear explosives, in the implementation of safety initiatives at the Pantex Plant.
- On August 6, 2002, the Board sent a letter to the Department regarding the electrical and lightning protection systems at the Pantex Plant.
- On August 6, 2002, the Board sent a letter to the Department regarding the lightning protection systems at the LANL nuclear facilities.
- On August 8, 2002, the Board sent a letter to the Department regarding the ISM annual review process in relation to the 95-2 implementation plan.
- On August 9, 2002, the Board sent a letter to the Department with a 30-day reporting requirement regarding issues related to material stabilization at the LANL and Revision 2 of the 2000-1 implementation plan.

September

- On September 9, 2002, the Board sent a letter to the Department regarding a staff report on Waste Feed Delivery Transfer System at the Hanford Site.
- September 9, 2002, the Board sent a letter announcing a September 26, 2002 Public Meeting on defense nuclear activities at LLNL.
- On September 18, 2002, the Board sent a letter to the Department regarding open commitments under implementation plan 2000-2.
- On September 23, 2002, the Board sent a letter to the Department forwarding recommendation 2002-1.
- On September 23, 2002, the Board sent a letter to the Department with a 60-day reporting requirement on the Department's plans for remediating the hazards posed by the sodium fluoride (NaF) traps stored in Building 3019A at ORNL in a safe and timely manner.
- On September 23, 2002, the Board sent a letter to the Department regarding a staff report on fire protection at the Pantex Plant.
- On September 23, 2002, the Board sent a letter to the Department regarding the implementation of safety and hazard analysis methodology at the Department's defense nuclear facilities.

October

- On October 3, 2002, the Board sent a letter to the Department forwarding recommendation 2002-2.
- On October 3, 2002, the Board sent a letter to the Department regarding a

staff report on the conduct of operations and training preparations for a contractor's ORR at Y-12.

- On October 10, 2002, Board recommendation 2002-2 was published in the *Federal Register.*

November

- On November 4, 2002, the Board sent a letter to the Department with a 60-day reporting requirement addressing deficiencies regarding safety and design basis of the WTP.
- On November 4, 2002, the Board sent a letter to the Department with a 30-day reporting requirement addressing the issues on DSA for HLW Concentration, Storage, and Transfer facilities at SRS.
- On November 4, 2002, the Board sent a letter to the Department regarding a proposed DOE Handbook, *Integration of Multiple Hazard Analysis Requirements and Activities*.
- On November 8, 2002, the Board sent a letter to the Department regarding the F-Canyon facility at the SRS.
- On November 13, 2002, the Board sent a letter to the Department with a 60-day reporting requirement addressing criticality safety for operations in Building 9212 and actions taken to ensure the continued adequacy of the Y-12 criticality safety program.
- On November 13, 2002, the Board sent a letter the Department with a 60-day reporting requirement on actions that will be taken to ensure controls to protect against significant exposure to radiological hazards at the Pantex Plant.
- On November 14, 2002, the Board sent a letter to the Department forwarding a the Board's staff observations HLW Building "Load Path Report."
- On November 15, 2002, the Board sent a letter to the Department regarding the need to restart disassembly and inspection operations for the W84 Program at the Pantex Plant.
- On November 15, 2002, the Board sent a letter to the Department with a 30-day reporting requirement on the vapor-space corrosion program.
- On November 22, 2002, the Board sent a letter to the Department approving the Department's request for an extension to respond to 2002-2.

December

- On December 11, 2002, the Board sent a letter to the Department forwarding recommendation 2002-3.
- On December 16, 2002, the Board sent a letter to the Department regarding a staff report on the status of the 2000-2 implementation plan .
- On December 16, 2002, the Board sent a letter to the Department with a 45-day reporting requirement addressing the issues on the WTP at Hanford.
- December 19, 2002, Board letter responding to Department letter dated November 18, 2002 regarding the TEF at SRS.
- December 19, 2002, Board letter regarding the implementation of SS-21 at the Pantex Plant relative to the 98-2 implementation plan.
- On December 20, 2002, *Federal Register* published recommendation 2002-3.
- December 27, 2002, Board letter establishing a 90-day reporting requirement addressing the issues regarding the design and safety bases of the HEUMF at Y-12.
- December 31, 2002, Board letter regarding HEUMF at Y-12.
- December 31, 2002, Board letter regarding the Department's September 17, 2002 report on inactive actinide materials.

TO THE BOARD FROM THE DEPARTMENT

January

- On January 2, 2002, the Assistant Secretary for EM sent a letter to the Board, responding to Board letter dated October 2, 2001, regarding ISM System of the CH2M Hill Hanford Group, Inc.
- On January 11, 2002, the Assistant Secretary for EM sent a letter to the Board providing the results of the Department's evaluation and future plans for use of SRS F-Canyon.
- On January 16, 2002, the Deputy Assistant Secretary for Integration and Disposition for EM sent a letter to the Board reporting completion of 2 commitments in implementation plan 2000-1.
- On January 17, 2002, the Acting Assistant Secretary for EH sent a letter to the Board reporting completion of commitment 21in implementation plan 2000-2 and proposing closure of said commitment.
- On January 23, 2002, the Assistant Deputy Administrator for Military Application and Stockpile Operations in Defense Programs sent a letter to the Board responding to the Board letter dated November 26, 2001, regarding concerns in the maintenance program at Y-12.
- On January 24, 2002, the Chairman of the FTCP sent a letter to the Board reporting completion of commitments 17 and 18 in the 2000-2 implementation plan. The letter proposed closure of both commitments.
- On January 29, 2002, the Chief of Staff for EM sent a letter to the Board providing information on a schedule delay in completing commitment 3.1 of the 2001-1 implementation plan.
- On January 29, 2002, the Chief of Staff for EM sent a letter to the Board reporting completion of commitment 4.1 in the 2001-1 implementation plan, *High Level Waste Management at the Savannah River Site.*

February

- On February 11, 2002, the Assistant Deputy Administrator for Military Application and Stockpile Operations in Defense Programs sent a letter to the Board enclosing the revised Section 11.8 of the Development & Production Manual relative to the W88 Analysis Report.
- On February 13, 2002, the Director of the OA sent a letter to the Board enclosing the *Functions, Responsibilities, and Authorities Manual* for the OA.
- On February 13, 2002, the Chief of Staff of EM sent a letter to the Board reporting completion of the Department's assessment of Tank Farm Space Management options and system vulnerabilities (commitment 3.1 in implementation plan 2001-1).
- On February 14, 2002, the Deputy Assistant Secretary for Integration and Disposition of EM sent a letter to the Board responding to Board letter dated November 21, 2001, regarding status of revisions to the 2000-1 implementation plan.
- On February 25, 2002, the Department sent a letter to the Board regarding the status of the revision to the *Nuclear Air Cleaning Handbook*, ERDA 76-21.
- On February 26, 2002, the Department sent a letter to the Board stating that the Department had begun converting pre-existing H-Canyon Plutonium 239 solution to oxide, as called for in commitment 201 of the 2000-1 implementation plan.

March

- On March 4, 2002, the Under Secretary sent a letter to the Board, responding to Board letter dated October 15, 2001 regarding integrated safety management issues for OR and BJC.
- On March 11, 2002, the Manager of AL sent a letter to the Board enclosing the 4th quarter report for fiscal year 2001 for implementation plan 98-2, revision 1.

The Department provided 81 letters to the Board in 2002.

- On March 14, 2002, the Assistant Secretary for EM sent a letter to the Board providing updated status on overdue EM commitments.
- On March 15, 2002, the Deputy Director for Operations of the Office of Science sent a letter to the Board enclosing two reports regarding nuclear safety management issues at the OR.
- On March 28, 2002, the Assistant Secretary for EM sent a letter to the Board forwarding the initial phase II assessment reports from CB and the INEEL in relation to implementation plan 2000-2.

April

- On April 1, 2002, the Deputy Administrator for Defense Programs sent a letter to the Board enclosing the schedule outlining the Department's plan to evaluate the seismic issues in Building 12-64 at the Pantex Plant for a possible upgrading to allow resumption of its use for nuclear explosive operations.
- On April 4, 2002, the Director of the Office of Environment, Safety and Health Inspections sent a letter to the Board forwarding a list of phase II assessments and expected completion dates relative to commitment 6 of implementation plan 2000-2 which calls for the evaluation of the results of phase I assessments and identification of facilities that will receive phase II assessments.
- On April 9, 2002, the Director of the Office of Environment, Safety and Health Inspections sent a letter to the Board regarding commitment 8 of implementation plan 2000-2 which calls for a summary of resources allocated for corrective actions in the fiscal year 2003 budget request from Congress.
- On April 9, 2002, the Assistant Secretary for EM forwarded the initial phase II assessment report from RF relative to the 2000-2 implementation plan .
- On April 11, 2002, the Chairman of the FTCP sent a letter to the Board forwarding the Functional Area Qualification Standard Upgrade Schedule in relation to commitment 19 of implementation plan 2000-2. Commitment 19 calls for the Department to revise the TQP standards. It proposes closure of the commitment.
- On April 16, 2002, the Assistant Deputy Administrator for Research, Development, and Simulation Defense Programs sent a letter to the Board enclosing the quarterly status report for the first and second quarters of fiscal year 2002 relative to implementation plan 97-2.
- On April 18, 2002, the Assistant Secretary for EM sent a letter to the Board responding to the Board's reporting requirement regarding planned Multi-Canister Overpacks at the Hanford SNF Project.
- On April 23, 2002, the Deputy Administrator for Defense Programs sent a letter to the Board responding to the Board's February 22, 2002 reporting requirement regarding Plutonium-238 at LANL.
- On April 29, 2002, the Assistant Secretary for EM sent a letter to the Board regarding HLW salt processing capability at SRS.

May

- On May 6, 2002, the Secretary sent a letter to the Board regarding the ongoing efforts to improve the criticality safety within the Department.
- On May 13, 2002, the Assistant Secretary for EM sent a letter to the Board forwarding the CAP and updating the Board on the annual ISM review for CH2M Hill Hanford Group, Inc.
- On May 17, 2002, the Deputy Administrator for Defense Programs sent a letter to the Board responding to the Board's reporting requirement dated March 7, 2002 regarding the design of the SURF.

June

- On June 17, 2002, the Administrator of the NNSA sent a letter to the Board providing an interim response to the Board's reporting requirement dated May 13, 2002 regarding concerns related to the fire protection at Building 9212 at Y-12.
- On June 24, 2002, the Secretary sent a letter to the Board providing an interim response to the Board's reporting requirement dated March 21, 2002 regarding the Department's future plans for the utilization of processing capabilities at SRS in relation to the 2000-1 implementation plan.
- On June 25, 2002, the Director for EH Inspections sent a letter to the Board forwarding information regarding the annual reports to the Secretary on ES&H assessments of safety systems related to the 2000-2 implementation plan.
- On June 25, 2002, the Assistant Secretary for EM sent a letter to the Board in response to Board letter dated March 19, 2002 regarding work control and ISM issues at RF.

July

- On July 1, 2002, the Deputy Administrator for Defense Programs sent a letter to the Board sent a letter to the Board regarding Aqueous Recovery Line for Plutonium-238 scrap at LANL
- On July 10, 2002, the Deputy Administrator for Defense Programs sent a letter to the Board forwarding the Initial Phase II report from the Y-12 Area Office, Building 9215 Stack 3 Exhaust System in relation to the 2000-2 implementation plan.
- On July 10, 2002, the Departmental Representative sent a letter to the Board forwarding the 2002 Facility Representatives Workshop Summary Report.
- On July 10, 2002, the Deputy Administrator for Defense Programs sent a letter to the Board forwarding an initial phase II assessment report from the AAO, Pantex Plant System Drawing Program, relative to the 2000-2 implementation plan.
- On July 11, 2002, the Associate Administrator for Facilities and Operations sent a letter informing the Board of a revision to the *Nuclear Air Cleaning Handbook* in relative to Commitment 23 of the 2000-2 implementation plan.
- On July 22, 2002, the Secretary sent a letter to the Board forwarding Revision 2 of the 2000-1 implementation plan.
- On July 23, 2002, the Deputy Administrator for Defense Programs sent a letter to the Board forwarding an initial Phase II assessment report for LLNL in relation to the 2000-2 implementation plan.
- On July 23, 2002, the Deputy Administrator for NNSA sent a letter to the Board regarding concerns related to Fire Protection in the Wet Chemistry area of Building 9212 (B-1 Wing) at Y-12.

August

- On August 5, 2002, the Secretary sent a letter to the Board regarding the *Department of Energy Electrical Safety Handbook.*
- On August 7, 2002, the Assistant Deputy Administrator for Research, Development, and Simulation, Defense Programs sent a letter to the Board forwarding the 3rd Quarter Status Report for fiscal year 2002 on the 97-2 implementation plan.
- On August 14, 2002, the Assistant Secretary for EM sent a letter to the Board regarding the CAP prepared by the RL relative to the electrical and instrument and control systems at PFP.
- On August 14, 2002, the Chairman of the FTCP, sent a letter to the Board providing additional detail for the FTCP agents to identify staff level personnel responsible for the oversight of contractor safety systems.

September

- On September 3, 2002, the Deputy Administrator for NNSA sent a letter to the Board providing a response to the Board's reporting requirement dated August 1, 2002 regarding the single point of contact concept relative to the W80 enhanced transportation cart approval.
- On September 3, 2002, the Deputy Administrator for NNSA sent a letter to the Board forwarding an initial Phase II assessment report on LLNL Building 625 Fire Sprinkler System in relation to the 2000-2 implementation plan.
- On September 6, 2002, the Deputy Administrator for the Office of Defense Programs sent a letter to the Board forwarding an action plan to address the issues on the emergency power system at Building 332 at LLNL.
- On September 16, 2002, the Assistant Secretary for EH sent a letter to the Board regarding the recommendations of the DOE Commission on Fire Safety and Preparedness.
- On September 18, 2002, the Assistant Secretary for EM sent a letter to the Board regarding seismic issues relative to the construction of the HLW Facility of the Hanford WTP.
- On September 19, 2002, the Chief Operating Officer for EM sent a letter to the Board on the completion of Commitment 2.7 of the 2001-1 implementation plan which calls for an action towards the establishment of a Salt Waste Processing Facility.
- On September 24, 2002, the Deputy Administrator for Defense Programs sent a letter to the Board responding to the Board's reporting requirement on the storage and disposition of inactive actinide nuclear materials.
- On September 30, 2002, the Assistant Secretary for EM sent a letter to the Board regarding the disposition of depleted uranium materials at SRS.

October

- On October 1, 2002, the Assistant Secretary for EM sent a letter to the Board responding to Board letter dated September 9, 2002 regarding Waste Feed Delivery transfer system at the Hanford Site.
- On October 1, 2002, the Assistant Secretary for EM sent a letter to the Board responding to a Board reporting requirement on HLW activities at SRS and alternative technologies for the removal of cesium from salt waste.
- On October 10, 2002, the Assistant Deputy Administrator for Research, Development, and Simulation of the Defense Programs sent a letter to Board Chairman John T. Conway inviting him to participate in the Nuclear Criticality Safety Program meeting scheduled on November 22, 2002 in Washington, D.C.
- On October 10, 2002, the Deputy Administrator for Defense Programs sent a letter to the Board forwarding an initial phase II assessment report from the Kirtland Site Office relative to the 2000-2 implementation plan.
- On October 15, 2002, the Assistant Deputy Administrator for Military Application and Stockpile Operations of the Defense Programs sent a letter to the Board providing an interim response regarding fire protection at the Pantex Plant.
- On October 17, 2002, the Deputy Administrator for Defense Programs sent a letter to the Board regarding worker protection in the TEF at SRS.
- On October 28, 2002, the Secretary sent a letter to the Board forwarding the changes to the Department's 98-2 implementation plan.
- On October 28, 2002, the Secretary sent a letter to the Board with the changes to the 98-2 implementation plan.
- On October 31, 2002, the Assistant Deputy Administrator for Research,

Development, and Simulation of the Defense Programs sent a letter to the Board forwarding the Department's fourth quarter status report for fiscal year 2002 relative to 97-2 implementation plan .

November

- On November 1, 2002, the Assistant Secretary for EM sent a letter to the Board regarding the Old HB-Line ventilation system in the SRS H-Canyon.
- On November 1, 2002, the Assistant Secretary for EM sent a letter to the Board responding to Board letter regarding the use of Thermogravimetric Analysis to stabilize plutonium oxides.
- On November 1, 2002, the Assistant Secretary for EM sent a letter to the Board reporting completion of 2000-1 implementation plan milestone on stabilization and packaging of solutions at Hanford's PFP.
- On November 12, 2002, the Assistant Deputy Administrator for Research, Development, and Simulation of the Defense Programs sent a letter to the Board regarding the cancellation of the SURF project.
- On November 18, 2002, the Deputy Administrator for Defense Programs sent a letter to the Board providing a compilation of responses on issues regarding the TEF project at SRS.
- On November 21, 2002, the Secretary sent a letter to the Board accepting 2002-1.
- On November 21, 2002, the Secretary sent a letter to the Board requesting a 45-day extension to respond to 2002-2.
- On November 22, 2002, the Secretary sent a letter to the Board forwarding the Department's QA Improvement Plan for the Defense Nuclear Facilities.
- On November 26, 2002, the Deputy Administrator for Defense Programs sent a letter to the Board in response to a Board letter dated October 3, 2002 regarding observations on Enriched Uranium Operations Wet Chemistry resumption activities at Y-12.
- On November 26, 2002, the Assistant Secretary for EM sent a letter to the Board providing status information on two Board recommendations as they apply to RF.

December

- On December 2, 2002, the Director of the ES&H Inspections sent a letter to the Board describing the Department's path forward towards the closure of 2000-2.
- On December 11, 2002, the Assistant Secretary for EM sent a letter to the Board regarding the review on CH2M Hill Hanford Group, Inc.'s ISM System.
- On December 13, 2002, the Department's response to recommendation 2002-1 was published in the *Federal Register*.
- On December 13, 2002, the Department's request for a 45-day extension to respond to recommendation 2002-2 was published in the *Federal Register*.
- December 20, 2002, the Department forwarded letter the Project Plan for the Disposition of the SRS Depleted, Natural, and Low-Enriched Uranium Materials
- On December 27, 2002, the Department sent a letter to the Board letter responding to Board letter dated June 5, 2002 regarding maintenance and reliable operations at the K Basin at the Hanford site.
- On December 30, 2002, the Department sent a letter responding to Board reporting requirement dated November 13, 2002 regarding criticality safety practices at Y-12.

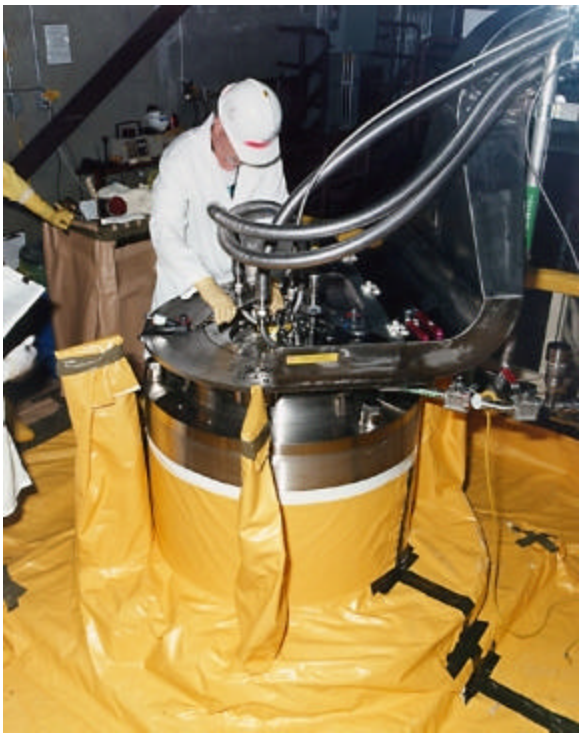
Appendix D
Abbreviations and Acronyms

2000-1	Board Recommendation 2000-1
2000-2	Board Recommendation 2000-2
2001-1	Board Recommendation 2001-1
2002-1	Board Recommendation 2002-1
2002-2	Board Recommendation 2002-2
2002-3	Board Recommendation 2002-3
92-4	Board Recommendation 92-4
94-1	Board Recommendation 94-1
95-2	Board Recommendation 95-2
96-1	Board Recommendation 96-1
97-1	Board Recommendation 97-1
97-2	Board Recommendation 97-2
98-1	Board Recommendation 98-1
98-2	Board Recommendation 98-2
99-1	Board Recommendation 99-1
ADU	Ammonium diuranate
AL	NNSA Albuquerque Service Center
ARO	Assurance Review Office
BJC	Bechtel Jacobs Company
BNI	Bechtel National, Inc
BWXT	Bechtel BWXT
Board	Defense Nuclear Facilities Safety Board
CAM	Corrective Action Management
CAMP	Corrective Action Management Program
CAP	Corrective Action Plans
CATS	Corrective Action Tracking System
CBFO	Carlsbad Field Office
CD-2	Critical decision 2
CFR	Code of Federal Regulations
CHG	CH2M Hill Hanford Group
CRD	Contractors Requirements Documents
D&D	Decontamination and Decommissioning
Department	Department of Energy
Departmental Representative	Department's Office of the Departmental Representative to the Board
DSA	Documented Safety Analysis

DST	Double Shell Tanks
DWTF	Decontamination and Waste Treatment Facility
DWPF	Defense Waste Processing Facility
EEG	Environmental Evaluation Group
EH	Office of Environment, Safety, and Health
EIS	Environmental Impact Statement
EM	Office of Environmental Management
EPS	Emergency Power System
ES&H	Environment, Safety and Health
Fernald	Fernald Environmental Management Project
FM/FO	Facility Manager and Facility Owner
FRA	Functions, Responsibilities and Authorities
FRAM	Functions, Responsibilities and Authorities Manual
FTCP	Federal Technical Capability Program
HEPA	High-Efficiency Particulate Air
HEUMF	Highly Enriched Uranium Manufacturing Facility
HLW	High-Level Waste
ID	Idaho Operations Office
INEEL	Department's Idaho Engineering and Environmental Laboratory
INPO	Institute of Nuclear Power Operations
INTEC	Idaho Nuclear Engineering and Technology Center at INEEL
ISM	Integrated Safety Management
ISMS	Integrated Safety Management Systems
ITP	In-Tank Precipitation
LANL	Department's Los Alamos National Laboratory
LASO	Los Alamos Site Office
LAW	Low-Activity Waste
LLMW	Low-Level Mixed Waste
LLNL	Department's Lawrence Livermore National Laboratory
LLW	Low-Level Waste
LSO	Livermore Site Office
Miamisburg	Miamisburg Closure Project
MWTF	Multi-Function Waste Tank Facility
NCSP	Nuclear Criticality Safety Program
NMMD	Nuclear Material Management Division
NNSA	Department's National Nuclear Security Administration

NTS	Nevada Test Site
NV	Nevada Operations Office
OA	Office of Independence Oversight and Performance Assurance
OAK	Oakland Operations Office
OH	Ohio Field Office
OR	Oak Ridge Operations Office
ORNL	Department's Oak Ridge National Laboratory
ORP	Department's Office of River Protection
ORR	Operational Readiness Review
OSHA	Occupational Safety and Health Administration
Panel	Federal Technical Capability Panel
PDR	Performance Dry Run
PEP	Program Execution Plan
PFP	Hanford Plutonium Finishing Plant
QA	Quality Assurance
R&D	Research and Development
RF	Rocky Flats Field Office
RFETS	Rocky Flats Environmental Technology Site
RFP	Request for Proposals
RH	Remote Handled
RL	Richland Operations Office
RM	Responsible Manager
ROD	Record of Decision
SBS	Safety Basis Strategy
Secretary	Secretary of Energy
SIMS	Safety Issues Management System
SME	Subject Matter Expert
SNF	Spent Nuclear Fuel
SNL	Department's Sandia National Laboratory
SQA	Software Quality Assurance
SR	Savannah River
SRIIC	Standards and Requirements Identification Improvement Council
SRS	Savannah River Site
SS-21	Seamless Safety for the 21st Century
SSO	Sandia Site Office
SURF	Sandia Underground Reactor Facility
TEF	Tritium Extraction Facility
TPB	Tetraphenylborate

TQP	Technical Qualification Program
TRU	Transuranic
TWRS	Tank Waste Remediation System
USQ	Unreviewed Safety Question
VPP	Voluntary Protection Program
VSS	Vital Safety System
West Valley	West Valley Demonstration Project
WIPP	Waste Isolation Pilot Plant
WSRC	Westinghouse Savannah River Company
WTP	Waste Treatment and Immobilization Plant
Y-12	Oak Ridge Y-12 National Security Complex
YSO	Y-12 Site Office



Cover Photograph:
Nuclear Chemical Operators Attach Hoses to Ports in the Top of a Multi-Canister Overpack Holding 290-300 Irradiated Fuel Assemblies from Hanford's K-Basins, in the Cold Vacuum Drying Facility.