96-0004891

Department of Energy

Washington, DC 20585

December 19, 1996

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

Dear Mr. Chairman:

The Department of Energy (DOE) committed in revision 2 of its Implementation Plan to respond to the Defense Nuclear Facilities Safety Board (Board) Recommendation 91-6 with quarterly status reports on the progress of completing commitments made in the Implementation Plan. Since October 1995, DOE and Board staffs have been working toward closure of Recommendation 91-6, and we are pleased to state that the enclosed tenth quarterly report is also the final report on the status of 91-6.

This report includes information on the disposition of all commitments related to the recommendation. We would also like to take this opportunity to thank you and your staff for the efforts that have been made in order to bring about the closure of 91-6.

Should you or your staff have any questions regarding this status report, please contact Mr. C. Rick Jones on (301) 903-6061.

Sincerely,

Tara O'Toole, M.D., M.P.H.
Assistant Secretary
Environment, Safety and Health

Enclosure

Department of Energy
Final Status Report
Defense Nuclear Facilities Safety Board
Recommendation 91-6 Implementation Plan

Executive Summary

This document presents the final status report with respect to commitments made in the Department's implementation plan responding to Defense Nuclear Facilities Safety Board (Board) Recommendation 91-6. Since the Board issued Recommendation 91-6, the Department has focused on defining clear radiation protection program expectations and strengthening line management accountability for program execution. With the codification of radiation protection requirements in title 10, Code of Federal Regulations, part 835 (10 CFR 835), the Department now has in place a regulatory based program, as mandated by Congress, consistent with private industry. Backed up by a Secretarial radiation protection policy and program implementation guidance, the Department has a comprehensive set of performance benchmarks.

Several other management actions and initiatives that respond to this recommendation and have contributed to strengthened radiation protection programs include:

- Issuance of implementation guides to assist contractors in implementing the radiation protection related requirements of Department of Energy (DOE) regulations;

- Approval of contractor radiation protection program plans that establish plans and measures to ensure compliance with 10 CFR 835, for all defense nuclear facilities;

- Establishment of an oversight structure that will provide independent monitoring of compliance with 10 CFR 835; and

- Standardization of DOE radiological worker and radiological control technician training courses and the establishment of a working group to continuously improve the training materials.

As evidenced in the Office of Oversight's "1995 Profile of the Status of Radiological Protection Programs in the DOE Complex," these actions and initiatives are delivering positive results for the Department. As stated in section 3.0 of this document, "Radiological performance data indicate that for the conditions experienced during 1995, workers within the complex were adequately protected from exposure to radiation and radioactive materials."

Board and Department staffs have worked diligently toward closure of commitments under Recommendation 91-6. Staff work is completed for currently relevant commitments, and ongoing management systems and initiatives are in place to ensure vigilance on the quality of worker radiation protection programs. In particular, the Department's implementation plans developed in response to Recommendations 95-2

and 93-3 contain initiatives that continue improvements that are important to radiological protection:

- Infrastructure and management of the Department's environment, safety, and health programs, including radiation protection, are being addressed as part of the implementation plan for Board Recommendation 95-2.

- Issues related to qualification of both Federal and contractor technical personnel, including key radiation protection professionals, are being addressed as part of the implementation plan for Board Recommendation 93-3 and the Contract Reform initiative. As mutually agreed to between DOE and DNFSB staff, a few remaining issues from Recommendation 91-6 have been transferred and will be tracked as part of the implementation plan for Board Recommendation 93-3. These include the issuance of the Knowledge, Skills, and Abilities (KSA) document as a technical standard and the publishing of six additional standardized training courses. Further, the "*Radiation Protection Qualification Standard, Defense Nuclear Facilities Technical Personnel*" will undergo an immediate review and revision.

With regard to the infrastructure and management of radiological control programs throughout the DOE complex, and as previously identified as a task in the Department's implementation plan for Recommendation 91-6, the Department has prepared a program plan in response to the issues raised by the Infrastructure Evaluation Team (IET) report. In order to continue gauging the Department's success in improving infrastructure and management, the Office of Oversight will conduct oversight assessments of progress toward implementing the corrective actions of the program plan. Assessment reports will be provided to the Board annually--due by the anniversary date of the finalized program plan.

Task 1: Develop and issue a Department of Energy policy statement on radiological health and safety. [*Responds to Board specific recommendation 1.*]

IMPLEMENTATION PLAN COMMITMENT 1.0:

The "Department of Energy Radiological Health and Safety Policy" was signed by the Secretary of Energy on June 8, 1993, and will be published in the Federal Register and as a Department of Energy Notice as soon as possible. No further action is planned on this task.

STATUS:

COMPLETE: The policy statement was issued as Department Notice 5480.8 on June 8, 1993, forwarded to the Board on June 9, 1993, and published in the Federal Register on June 21, 1993. The Department updated and reissued the policy statement as DOE P 441.1, "Department of Energy Radiological Health and Safety," on April 26, 1996.

Task 2: Review existing radiation protection training programs at defense nuclear facilities, and develop and implement a plan for an expanded training program at these facilities.

Subtask 2.1: Radiological Control Training [*Responds to Board specific recommendations 2a and g*]

IMPLEMENTATION PLAN COMMITMENT 2.1.1:

"Based on the approved site-specific Radiological Control Manual implementation plans, the Department will provide the Board with a complete listing of standardized core training material implementation milestones by June 30, 1993. These milestones will identify when standardized core course materials will be fully implemented including development of the site-specific training materials. General Employee Radiological Training, Radiological Worker I and II Training, and Radiological Control Technician Training for all affected workers using the standardized core training material will be completed by December 1994. A brief explanation of the current development status, including milestones for development, use, and implementation, for each of the additional standardized core training courses will be provided to the Board by June 30, 1993. Since the Department is to update the Secretary on Radiological Control Manual implementation progress in an Annual Report that is expected to be issued at the end of each calendar year beginning in 1993, the Department will advise the Board of the status of efforts to fully implement the standardized core training courses during the first quarterly status report following the secretarial update."

STATUS:

COMPLETE: The Department provided a complete listing of standardized core training material implementation milestones for its defense nuclear facilities to the Board on June 30, 1993.

The Department developed standardized training materials for four courses as follows: General Employee Radiological Training (GERT), Radiological Worker I and II Training (RW), and Radiological Control Technician Training (RCT). Course materials were issued in October 1992. All defense nuclear facilities completed

implementation of the four original standardized core courses. Although most defense nuclear facilities had completed implementation of most of the four original courses, implementation of the Radiological Control Technician course was not completed at one defense nuclear facility until July 1996. Due to the fact that personnel changes and new hires are always expected to occur, there is always the possibility of the existence of new workers that will require training. Therefore, all defense nuclear facilities have controls in place which ensure that only currently trained workers are permitted unescorted access to radiological areas.

The schedule for developing additional courses, which was originally provided to the Board, has been revised. The Department has issued six additional courses for use at defense nuclear facilities and one training guide (Radiological Support Personnel). These six additional courses are:

a. High Level Training for Supervisors;
b. Radiation Safety Training for Plutonium Facilities;
c. Radiological Control Manual Training for Managers;
d. Radiological Assessor Training Fundamental Radiological Control;
e. Radiological Assessor Training Applied Radiological Control; and
f. Radiation Safety Training for Tritium Facilities.

Five additional courses are nearing completion and should be disseminated early in calendar year 1997. The status of these additional courses will be reported in the Department's Recommendation 93-3 Implementation Plan Quarterly Report to the Board following issuance of these courses. These five additional courses are:

a. Radiation Safety Training for Accelerator Facilities;
b. Radiation Safety Training for Uranium Facilities;
c. "As Low As Reasonably Achievable" Training for Technical Support Personnel;
d. Radiation Producing Device Safety Training; and
e. Contamination Control for Biomedical Researchers.

IMPLEMENTATION PLAN COMMITMENT 2.1.2:

"By December 1993, for each of the existing standardized core training courses, the Department will document each course's technical basis including a description of how pertinent references and standards were used or why certain documents were not used including, at a minimum, those references suggested by the Board in Recommendation 91-6 and its attachment. In addition to the technical basis for each training course, the basis for any identified refresher or continuing training requirements will also be documented.

Similar technical basis documentation will be included during the development of future courses as well. As course materials are revised and updated, these technical bases will be updated as needed."

STATUS:

COMPLETE: The technical bases for the four original standardized core training courses have been developed. This information was provided to the Board staff on March 8, 1994.

The basis for refresher and continuing training course material for the original four standardized core courses is included in the course material. These courses generally adopted industry standards that use similar requirements for refresher and continuing training.

The lesson plans for additional standardized courses were transmitted for use on November 11, 1994, and May 1, 1995. The inclusion of technical bases in additional courses is integral to the process of developing these courses. Accordingly, the additional courses that have been issued contain appropriate technical bases. The five additional courses in development will also contain appropriate technical bases.

IMPLEMENTATION PLAN COMMITMENT 2.1.3:

"The Department's defense nuclear facilities will also ensure the effectiveness of Department and contractor training provided to workers through post-training evaluations on a continuing basis. Post-training evaluations will be used to identify opportunities for improving course materials and upgrading instruction methods and techniques. These evaluations will also be used to identify needs for additional training. By October 1993, the Department will identify the criteria to be used for developing a post-training evaluation program. The post-training evaluation program will be developed and distributed to Department contractors by May 1994. Because not all defense nuclear facilities have fully implemented the standardized core training materials, contractors will be permitted six months to fully implement a post-training evaluation program following implementation of the standardized core training. Those defense nuclear facilities that have implemented the standardized core training materials prior to the availability of the post-training evaluation program must implement the program by December 1994.

At least annually, Cognizant Secretarial Officers and Operations Offices will request and coordinate contractor recommendations to the Office of Health Physics and Industrial Hygiene for upgrading and improving standardized core training materials. These recommendations will be evaluated and incorporated, as appropriate. Additionally, the post-training evaluations will be used to maintain and upgrade the site-specific portions of these training courses. Department oversight organizations will monitor program implementation and adequacy."

STATUS:

COMPLETE: Development of the post training evaluation program was completed on September 8, 1994. The post training evaluation program incorporates the retention testing criteria discussed under commitment 2.2.7. The program guidelines provide for feedback into maintaining and upgrading the training courses to correct any deficiencies. The post training evaluation program was distributed by the Assistant Secretary for Environment, Safety and Health (EH-1) and the Office of Field Management to Department sites and contractors on December 9, 1994. As of July 1996, post training evaluation and retention testing had been implemented at all defense nuclear facilities.

Training materials for the four original standardized core courses contain a form soliciting changes to course material. Course material has been revised in response to comments received from the field in 1994 and 1995. These revisions were distributed in October 1994 and November 1995.

A sampling of defense nuclear facilities indicates that post training evaluation and retention testing programs are being effectively used to upgrade site specific portions of the four original standardized courses. Several elements of post training evaluation and retention testing, such as observations of work practices, review of occurrences, and lessons learned, are used by training professionals to identify and correct weaknesses in site specific portions of these training courses. Retention testing allows training professionals to identify specific topics that line organizations need to reinforce with their workforce.

Department oversight organizations will monitor implementation and adequacy of the post training evaluation and retention testing program.

Subtask 2.2: Qualification and Performance of Radiation Protection Personnel [*Response to Board specific recommendations 2b through f*]

IMPLEMENTATION PLAN COMMITMENT 2.2.1:

"The Department will determine the key radiation protection positions both as identified in the Radiological Control Manual and any additional positions with a discretionary decision-making role in radiological matters (e.g., Radiological Control Manager, Radiological Control Program Advisors, Health Physicists,

Radiological Control/Health Physics Technicians, Dosimetrists, Facility Representatives, managers, and supervisors) at defense nuclear facilities by August 1993."

STATUS:

COMPLETE: The Department developed a definition for key radiation protection positions. The Board staff was provided with the definition and listings of key radiation protection positions on August 4, 1994.

IMPLEMENTATION PLAN COMMITMENT 2.2.2:

"The Department will complete the identification of the level of knowledge, skills, abilities, and other qualifications needed for each key radiation protection position consistent with Office of Personnel Management and Department contracting procedures by February 1994. A comprehensive document describing the level of knowledge, skills, abilities, training and other qualifications for these key radiation protection positions will be developed by April 1994. Position descriptions and their corresponding training and qualification requirements for key radiation protection positions will be documented in the appropriate Department Order, Notice, and/or the Radiological Control Manual by August 1994. As provided in the Board's specific recommendations 2a and 2b, the identification of the level of knowledge, skills, and abilities will include comparison with guidance on training contained in "Guide to Good Practice in Radiation Protection Training," Training Resources and Data Exchange Oak Ridge Associated Universities 88/H-99, and "Guidelines for Training and Qualification of Radiological Protection Technicians," Institute of Nuclear Power Operations 87-008. The Department will base the identification of the level of knowledge, skills, abilities, and other qualifications on professional and industry standards. In defining the qualification requirements for radiation protection positions, consideration will be given to including association or interaction with professional health physics organizations, such as the Health Physics Society, the American Board of Health Physics certification, and the National Registry of Radiation Protection Technologists registration for appropriate professionals."

STATUS:

FUNCTIONALLY COMPLETE: The Department has issued DOE Order 360.1, *Training*, which applies to all Federal DOE technical employees and requires that individuals whose positions require them to provide direction that could impact the safe operation of a defense nuclear facility participate in the Technical Qualifications Program.

DOE has developed the *Radiation Protection Qualification Standard, Defense Nuclear Facilities Technical Personnel* that establishes common functional area competency requirements for all Department radiation protection professionals. The DOE Implementation Plan developed in response to DNFSB Recommendation 93-3 committed to

full implementation of the Technical Qualification Program that has been accomplished for all defense nuclear facilities. Implementation includes: identification of appropriate participants; issuance of the qualification standards; review of professional qualifications against the qualification standard; and creation of individual development plans to correct qualification deficiencies. Technical professionals have 3 years to address any deficiencies in technical competency identified in their individual development plans.

DOE contractor qualifications for technical personnel are addressed by DOE Order 5480.20A, *Personnel Selection, Qualification, and Training Requirements for DOE Nuclear Facilities*, and 10 CFR 830.120, *Quality assurance requirements*. DOE 5480.20A provides the requirements for the administration of training programs and sets standards for the qualification of radiation protection personnel at defense nuclear facilities. DOE 5480.20A requires each facility to establish a Training Implementation Matrix (TIM). Each TIM delineates job classifications, education, qualifications, and job-specific experience requirements. 10 CFR 830.120, *Qualification assurance requirements*, requires that personnel be provided continuing training to ensure that job proficiency is maintained. These regulations and DOE 5480.20A effectively codify a training and qualification program that provides reasonable assurance that radiation protection professionals meet the requirements for their positions.

Additionally, regulations are proposed under 10 CFR 830.330, *Training and qualification*, which would codify the requirements of DOE 5480.20A. The proposed rule would require the development of a training and qualification plan, approval by the Department, and compliance with the approved plan. The plan must address industry and DOE standards used to establish training and qualification programs.

These programs represent a marked improvement in DOE qualifications standards for professionals. In May 1996, an informal compilation of the number of DOE radiation protection professionals associated with defense nuclear programs was developed. The compilation includes individual education, experience, information on relevant certifications, and status in the training and qualifications program. A complete listing of positions was provided in the TET Program Plan. The following significant conclusions resulted from this compilation:

- There are approximately 160 Federal radiation protection professionals associated with defense nuclear programs. This includes 37 support contractors.

- The majority (89 percent) of DOE radiation protection professionals have at least a baccalaureate degree and 51 percent have advanced degrees.

- The average experience level for DOE radiation protection professionals is 18 years.

- Thirty-four percent of these DOE radiation protection professionals hold a relevant certification, such as American Board of Health Physics (ABHP) certification (including those professionals who have passed the first part of the ABHP certification examination), registered Professional Engineer, Radiation Protection Inspector certification, or Registered Radiation Protection Technologist (NRRPT).

- The Office of Oversight report, *Initial Profile, Radiological Protection Programs in the Department of Energy Complex*, issued in 1995, determined that 44 radiological protection positions were associated with the ten sites assessed in the profile. A review of those same sites in 1996 determined that 56 radiation protection professionals (including contractors) are assigned to DOE offices directly responsible for those sites. It should be noted that this number does not include independent oversight or Program Office radiological support.

This compilation of information shows a marked improvement in the allocation of professional resources to radiation protection and demonstrates the high quality of DOE radiation protection professionals.

In addition to these improvements, the Department will review and revise the current radiological protection qualification standard for Federal personnel. This standard is currently being reviewed and will be revised and should be finalized by December 1996.

Along with the existence of the Recommendation 93-3 requirements, the issuance of the "Knowledge, Skills and Abilities Key Radiation Protection Personnel at DOE Facilities" document as a mandatory document would set up a dual requirements structure for Radiological Protection positions. Recognizing this fact, the KSA document will be issued as guidance by the Department. The document is completing Department-wide review and will be issued as a technical standard. Issuance of this document will be reported in the Recommendation 93-3 Implementation Plan Quarterly Report following release of the final version of the document.

Regarding raciological protection resources, and despite the initiatives mentioned above, the Department remains vigilant on this issue. Recently, the Department has noted a lack of qualified radiation protection personnel at some Department of Energy field programs (i.e., Richland and Rocky Flats). At Richland, there has been an expedited effort to hire six additional radiological protection personnel through the Excepted Service program. To date, this has resulted in one individual having been hired and three other individuals having been selected and now in the final stages of the approval process. Two additional positions are pending, the selection for one out of these two has been determined, and this individual's application is at the early stages of the approval process.

IMPLEMENTATION PLAN COMMITMENT 2.2.3:

"Radiological control performance criteria will be included in performance standards for each key position to provide management with measurable milestones to monitor the performance of individuals in key positions. Standardized radiological control performance criteria will be developed by April 1994 and incorporated into individual performance evaluation plans and standards by June 1994."

STATUS:

COMPLETE: Guidance for incorporating radiological control performance criteria into performance evaluations of individuals in key radiation protection positions is provided in the technical standard (KSA document) for qualifications of contractor key radiation protection positions discussed in the status for commitment 2.2.2.

IMPLEMENTATION PLAN COMMITMENT 2.2.4:

"In response to the Board's specific recommendations 2c and 2d, consistent with Office of Personnel Management regulations for Federal employees and Department contracting practices for contractor employees, the Department or contractor, as applicable, will compare the level of knowledge, skills, and abilities of incumbents in key positions to the criteria identified in the previous commitment above. The comparison will include a list of training courses attended with dates, duration of course, and sponsor, as well as a list of any professional certifications and affiliations. The Department or contractor, as applicable, will also compare the existing training and/or training that is concurrently under development for radiation protection positions against the level of knowledge, skills, abilities, and other qualifications and identify upgrades to the existing training, and/or the need for the development of supplemental training necessary to ensure that radiation protection personnel meet the qualifications for their respective positions. The comparison will be completed by August 1994. Based upon this comparison, the Department will develop and/or upgrade standardized core training courses, as necessary. New courses will be developed as needed and ongoing upgrades of the standardized core courses will be conducted on an annual basis."

STATUS:

COMPLETE: This commitment is included with the qualification standards for Federal and contractor personnel discussed under commitment 2.2.2. above.

IMPLEMENTATION PLAN COMMITMENT 2.2.5:

"As a matter of management prerogative, two options are available for cases where an incumbent does not meet the level of knowledge, skills, and abilities required of their position. First, the employee can be reassigned to another position of equal grade, if available, or second, the incumbent may be offered supplemental training

to ensure that they develop the level of knowledge, skills, and abilities necessary for their position. Where the supplemental training option is chosen by management, the Department or contractor and affected incumbent will mutually identify the supplemental training necessary to upgrade their level of knowledge, skills, and abilities by December 1994.

The identified supplemental training requirements will be provided to the incumbent's direct supervisor for incorporation in each incumbent's individual development plan established for Federal employees and similar contractor programs. Supplemental training must be completed within 2 years of identification for incumbents to continue in their position. The need for interim measures will be identified and implemented by management. The incumbent's knowledge, skills and abilities will be evaluated through appropriate written, oral, or practical examination at the conclusion of each supplemental training course to ensure that the course content is valid and effective for increasing the level of knowledge, skills, and abilities identified in the previous commitment number 2 above. The impact of the training on performance will be evaluated during the ongoing performance management process."

STATUS:

COMPLETE: This commitment is included with the qualification standards for Federal and contractor personnel discussed under commitment 2.2.2. above. Both sets of standards provide schedules for incumbents and new hires to achieve the requisite qualifications for radiation protection professional positions.

IMPLEMENTATION PLAN COMMITMENT 2.2.6:

"The Department commits to have its oversight organizations specifically evaluate program performance to identify deficiencies in the knowledge, skills, and abilities of key personnel. These evaluations will be used to identify specific areas where improvements in performance and training are needed."

STATUS:

COMPLETE: This commitment is included with the qualification standards for Federal and contractor personnel discussed under commitment 2.2.2. above.

As evidenced in the 1995 "Profile of the Status of Radiological Protection Programs in the DOE Complex" report, the Office of Oversight has already included the evaluation of Training and Qualification Programs as an integral part of their radiological protection assessments.

IMPLEMENTATION PLAN COMMITMENT 2.2.7:

"The criteria for adequate retention of knowledge, skills, and abilities will be developed as part of a retention testing program to help identify when individual performance or testing fails to meet expectations. One of the methods that will be utilized in developing and conducting the retention testing program will be the use of the radiological performance goals provided in article 131 of the Radiological Control Manual. Both independent and management radiological performance assessments will also be used to provide management with a series of indicators that can assist in the identification of adverse trends in performance. The retention criteria will be disseminated to contractors by May 1994. Sites will begin retention testing 6 months following scheduled implementation of the standardized core training material. For sites that have already implemented the standardized core training, retention testing will begin by December 1994. Corrective actions for deficiencies detected as a result of the retention testing will be incorporated into the individual's development plan and the site's training program on an appropriate schedule."

STATUS:

COMPLETE: Retention testing is incorporated in the post-training evaluation program. See discussion under commitment 2.1.3, above.

Task 3: Evaluate the adequacy of the Department infrastructure and resources dedicated to radiation protection at defense nuclear facilities. [*Responds to Board specific recommendations 3 and 4*]

IMPLEMENTATION PLAN COMMITMENT 3.1:

"The Department will establish an Infrastructure Evaluation Team (IET) to conduct an independent, external evaluation of the Department Headquarters, Operations, and contractor radiation protection infrastructure and resources dedicated to radiation protection at defense nuclear facilities. The Evaluation Team is anticipated to be composed of members from other Federal agencies, private industry, and academia, with representation by the Department. The Team members will be appointed by September 1993. The Department will notify the Board of the Evaluation Team's membership.

Consistent with the Board's third specific recommendation, the Evaluation Team will be tasked with examining the existing infrastructure for radiation protection program development and implementation at Department Headquarters to determine if resource, organizational, or managerial changes are needed to:

a. emphasize the priority and importance of the radiation protection program to assuring public health and safety;
b. communicate the importance of the radiation protection program from the highest level of management to all appropriate Department personnel;
c. expand the radiation protection program and increase program resources to facilitate the rapid development and implementation of radiological protection standards throughout the defense nuclear facility complex; and
d. make other changes as warranted.

In response to the Board's fourth specific recommendation, the Evaluation Team will also be tasked with examining the corresponding radiological protection organization units at the Department's operations offices and contractor organizations to determine if those organizations' radiological protection programs' infrastructure and responsibilities can be strengthened to expedite implementation of radiological protection standards. A critical aspect of this review will be the assessment of management's involvement and effectiveness in implementing radiological protection programs and management's ability to communicate the steps to be taken to implement an effective radiological protection program to all levels within relevant Department and contractor units, particularly with line organizations."

STATUS:

COMPLETE: The Evaluation Team chairman and membership were identified in September 1993. Dr. John Poston (Texas A&M University) was appointed Chair. Dr. David Adcock (University of South Carolina), Dr. A. Ruttenber (University of Colorado), Dr. Marco Zaider (Columbia University), Mr. William Murray (NIOSH), and Mr. John Matuzak (N.Y. State) were appointed as members. Mr. Matuzak resigned from the team in May 1994. Evaluation Team membership was provided to the Board on October 26, 1993.

IMPLEMENTATION PLAN COMMITMENT 3.2:

"The Evaluation Team will report directly to the Assistant Secretary for Environment, Safety and Health. The Evaluation Team will complete its evaluation by January 1994. As a result of their evaluation, the Team will prepare a report that summarizes their findings related to the organizations' radiological protection programs' infrastructure, resources, and delegation of responsibilities. Any recommendations made by the Team should include options to implement the recommendations, including necessary changes to implementing directives and taking into account available resources and identifying the need for additional resources. This report will be provided to the Assistant Secretary by March 1994 who will then submit a copy of the report to the Board by April 1994."

STATUS:

COMPLETE: The Evaluation Team completed their evaluation in December 1994 and provided their report with 11 specific recommendations to the Assistant Secretary for Environment, Safety and Health on January 10, 1995. A copy of the report was provided to the Board on February 16, 1995.

IMPLEMENTATION PLAN COMMITMENT 3.3:

"The Assistant Secretary for Environment, Safety and Health will review the Evaluation Team's report and confer with the Radiological Control Coordinating Committee to obtain their views on the report. The Assistant Secretary will then identify those recommendations and options appropriate for the Office of Environment, Safety and Health to implement and those recommendations and options necessary for the Secretary's consideration. This review will be completed by April 1994. For those recommendations and options accepted by the Office of Environment, Safety and Health, the Assistant Secretary will develop corrective actions and schedules for completion by June 1994. Following consideration of the recommendations and options referred to the Secretary, corrective actions and schedules for those recommendations and options accepted will be developed by July 1994. For each corrective action accepted by either the Secretary or Assistant Secretary, aggressive schedules for identifying critical milestones to achieve successful implementation will be developed. To assure milestones in this

Implementation Plan are achieved, the Department will conduct annual oversight assessments of progress toward implementing corrective actions. These assessments will be provided to the Secretary annually with a copy provided to the Board."

STATUS:

COMPLETE: The IET concluded its evaluation in December 1994 and submitted its final report, including 11 recommendations, to the Assistant Secretary for Environment, Safety and Health in January 1995. In June 1995, DOE completed development of a Program Plan addressing many of the IET recommendations. However, due to the Secretary's ongoing Strategic Alignment Initiative (SAI), DOE withheld action on organizational issues identified by the IET. Considering the results of the Strategic Alignment and other performance improvement initiatives, the Program Plan was revised to be fully responsive to and resolve the issues raised by the IET, as well as to discuss ongoing continuous improvement initiatives that enhance worker protection within DOE.

Coincident with the IET evaluation, DOE was nearing the end of a transitional period in its radiation protection programs. This period included: (1) transition from a production mission to a joint production and environmental management mission; (2) transition from implementation of contractually-based requirements to regulatory requirements; and (3) implementation of detailed requirements promulgated in the *Radiological Control Manual*. Significantly, the issues raised by the IET report were generally consistent with those resulting form other internal and independent assessments of DOE. As a result, the Program Plan references many existing initiatives that address issues raised in the IET report, including the following:

- DOE Strategic Alignment Initiative;
- Hazardous Waste Activities Health and Safety Initiative;
- Environment, Safety and Health Management Plan;
- Occurrence Reporting and Processing System;
- Noncompliance Tracking System;
- DOECAST system;
- DOE Implementation Plan in response to DNFSB Recommendation 93-3 (technical qualifications); and
- DOE Implementation Plan in response to DNFSB Recommendation 95-2 (safety management).

In particular, an initiative that is expected to address several aspects of the issues raised by the IET is the Implementation Plan in response to DNFSB Recommendation 95-2. This implementation plan will result in the design of an Integrated Safety Management System that will:

- Enhance ability to plan and execute work;
- Clarify expectations;
- Establish clear rules and responsibilities for protection of ES&H;

- Shift the focus of attention to a disciplined, analytical, and collaborative focus on work planning, hazard analysis, and hazard control; and
- Establish analytical bases for setting risk-based management and project priorities.

The key elements of Integrated Safety Management include:

- Institutionalizing the program through the Department directives system;
- Upgrading the Functions, Assignments, and Responsibilities Manual;
- Enhancing departmental technical expertise;
- Developing contractual mechanisms to implement the program; and
- Implementing the program at priority sites and facilities.

Another initiative that addresses planning and resource prioritization at DOE is the Environment, Safety and Health Management Plan. Resources are allocated in accordance with the Management Plan on a 3 year basis. The process of ES&H budget prioritization includes reviews by the Cognizant Secretarial Officers, operations/field offices and EH to ensure that environment, safety, and health issues are given appropriate resources. The Executive Summary from the Guidance Manual, Environment, Safety and Health Management Plan, Fiscal Year 1998 (published 1995), states,

> *"The primary objective of the ES&H management planning process described in this manual is to provide the structured management processes and tools that will help DOE identify and prioritize its ES&H needs, make cost effective ES&H risk management decisions, communicate the implications of these decisions to all stakeholders, integrate ES&H into all of its business functions, and establish accountability for ES&H performance."*

The Office of Oversight will conduct oversight reviews of selected radiation protection programs and provide findings and observations to DOE management so that effective management attention can be brought to bear where necessary, as a normal course of business. Assessment reports will be provided to the Board annually--due by September 12 of each year.

IMPLEMENTATION PLAN COMMITMENT 3.4:

"The Department will centralize current contractor Radiological Control Manual implementation plans for defense nuclear facilities of the Offices of Defense Programs and Environmental Restoration and Waste Management, and these plans will be provided to the Board by October 1993."

STATUS:

COMPLETE: Radiological Control Manual implementation plans have been centralized and are available through the Radiological Control Program Advisor in the Office of

Environmental Management. These plans were forwarded to the Board on October 28, 1993.

IMPLEMENTATION PLAN COMMITMENT 3.5:

"The Department commits to providing the Board with the credentials and qualifications of individuals currently conducting the Department internal oversight activities relating to radiological protection by October 1993."

STATUS:

COMPLETE: Credentials and qualifications of individuals conducting internal oversight activities related to radiation protection were provided to the Board on October 29, 1993. Additional resumes were subsequently provided by the Office of Environment, Safety and Health.

Task 4: Analysis of reported occurrences and correction of radiation protection program deficiencies at defense nuclear facilities. [*Responds to Board specific recommendation 5*]

IMPLEMENTATION PLAN COMMITMENT 4.1:

"By August 1993 meet with current Department Headquarters Occurrence Reporting and Processing System program manager to determine current Occurrence Reporting and Processing System capabilities."

STATUS:

COMPLETE: Occurrence Reporting and Processing Systems (ORPS) capabilities are adequately described in Department Order 5000.3B and supplemented in the "ORPS User's Manual."

A task force was appointed in October 1993 to evaluate the ORPS with the goal of identifying improvements for developing and using lessons learned, conducting operating experience feedback, and recommending other opportunities for communicating lessons learned and good practices across the Department complex. The final report was signed by the Assistant Secretary on August 14, 1995.

IMPLEMENTATION PLAN COMMITMENT 4.2:

"By October 1993 complete an evaluation of defense nuclear facilities' use of the Occurrence Reporting and Processing System information, how useful is the information that is available, and solicit recommendations from users for improvement."

STATUS:

COMPLETE: A survey of users of ORPS for radiological occurrence data analysis was conducted by the task force described in commitment 4.3 in October and November 1993.

IMPLEMENTATION PLAN COMMITMENT 4.3:

"By November 1993 convene a task force of Headquarters, Operations, and contractor personnel to evaluate the data regarding the current use and capabilities of the Occurrence Reporting and Processing System and make recommendations for improvement by February 1994. The Occurrence Reporting and Processing System management and the

Radiological Control Coordinating Committee will evaluate these recommendations and develop a schedule with milestones for implementing corrective actions by June 1994. Goals of the task force evaluation and areas for recommended improvements will include the following:

- *Develop lessons learned with supporting information from throughout the Department defense nuclear facilities complex that includes input from top management to worker level. Improve worker performance through awareness of previous related occurrences. Management should identify adverse trends in performance to prevent occurrences.*

- *Include lessons learned by management during training (both initial and periodic refresher), by safety committees, at meetings, and from reading files. Incorporate lessons learned into future assessments to ensure assessments are properly focused.*

- *Operating experience feedback--similar to a formalized program used in the commercial nuclear power industry to identify generic problems, apprise the industry of these problems, and document measures at individual sites to prevent problems from occurring and recurring.*

Other opportunities for communicating lessons learned and good practices across the Department complex will be pursued, encouraged, and implemented."

STATUS:

COMPLETE: The task force was convened in November 1993. The task force was comprised of members from the Office of Health Physics and Industrial Hygiene (EH-411), ORPS program management, Office of Environmental Management, and the Fernald Field Office. Contractor personnel were contacted regarding specific questions identified by the task force. The task force initially issued a draft report for review by the Radiological Controls Coordinating Committee (RCCC) in March 1994. The draft report contained ORPS program management input since they were represented on the task force. The completed report was issued on August 14, 1995, by the Assistant Secretary for Environment, Safety and Health. All of the actions recommended in the report were either completed or nearing completion by the time the report was issued. Actions within the Department continue to be taken to refine and improve the ORPS.

Additionally, in support of DOE's ongoing management responsibilities, DOE has implemented systems to collect and analyze performance indicators and operational information and provide reports similar to those used in the commercial nuclear industry. These systems include the Technical Information System (TIS), ORPS, Computerized Accident/Incident Reporting System (CAIRS), Noncompliance Tracking System (NTS), Performance Indicator Data System (PIDS), and the ES&H Management Plan Information System.

Task 5: Document technical basis for departmental radiation protection standards and remedial actions during standards implementation at defense nuclear facilities. [*Responds to Board specific recommendations 6 and 7*]

IMPLEMENTATION PLAN COMMITMENT 5.1:

"The Department will further document the technical basis for developing the Radiological Control Manual that will include a description of how pertinent references and standards were used or why certain documents were not used, including, at a minimum, those references suggested by the Board in Recommendation 91-6 and its attachment. This technical basis document will be completed and provided to the Board by December 1993."

STATUS:

COMPLETE: A technical basis data base for the Radiological Control Manual was developed and forwarded to the Board on December 31, 1993.

IMPLEMENTATION PLAN COMMITMENT 5.2:

"In the event that the Department identifies any gaps in the standards used during the development of the Radiological Control Manual, Department Order 5480.11, or title 10 CFR 835, the affected document will be corrected. Future oversight assessments of the Department's radiological protection programs and practices at defense nuclear facilities will be conducted based upon these upgraded standards."

STATUS:

COMPLETE: The Department documented the technical basis for developing the *Radiological Control Manual*, Department Order 5480.11, and 10 CFR 835 and found no gaps in the standards used in their development. The Department's Office of Worker Protection Programs and Hazards Management is responsible for the review of new national and international standards for applicability to Department radiological worker protection and to ensure that Department regulations and requirements are revised accordingly.

The Radiological Control Manual is no longer mandatory and Department Order 5480.11 is no longer in effect. 10 CFR 835 and the supporting Implementation Guides provide an adequate regulatory basis for occupational radiation protection. Department Notice 441.1 covers any gaps in regulation left by the elimination of Department

Order 5480.11 and the change in status of the Radiological Control Manual from mandatory to guidance. The pending proposed amendment to 10 CFR 835 is intended to codify essential elements of DOE N 441.1 and to address other regulatory concerns. Supporting regulatory analyses have been developed, shared with the DNFSB staff, and will be available for public review in the DOE Freedom of Information Act room at DOE Headquarters in Washington, DC, during the period of public comment on the proposed amendment.

Oversight of radiological protection programs within the defense nuclear complex is based on current Department standards. Additionally, DOE has the option of pursuing enforcement actions against contractors that violate the Department's regulatory requirements. The EH Enforcement and Investigation Staff administers the Price-Anderson Amendments Act enforcement program. This program is the Department's management tool to judiciously take action against a DOE contractor when significant safety actions or conditions exist that violate nuclear safety requirements, such as 10 CFR 835. The actions that are available to the Enforcement and Investigation Staff are: enforcement conferences, Notices of Violation, civil penalties, and Department of Justice referrals for criminal prosecution for matters involving willful and intentional violations. Several enforcement conferences have been held throughout the DOE complex resulting in civil penalties being assessed against three contractors.

IMPLEMENTATION PLAN COMMITMENT 5.3:

"The Department will develop target dates for full implementation of the Radiological Control Manual, Department Order 5480.11, and title 10 CFR 835 at defense nuclear facilities. For all defense nuclear facilities except those listed in Appendix D (of the Implementation Plan), the Department commits to full implementation of these three documents by October 1996 unless specific exception has been approved by the proper authority and concurred in by the Assistant Secretary for Environment, Safety and Health. To ensure expeditious implementation, the Department will evaluate and report on progress towards full implementation of these documents on an annual basis. These progress reports will be provided to the Secretary annually. The Department will provide a copy of these progress reports to the Board in the first quarterly status report (see Task 6, below) following the briefing of the Secretary."

STATUS:

COMPLETE: Compliance with 10 CFR 835 was mandated by January 1, 1996. Radiation protection programs committing to this schedule were approved for all DOE radiological facilities. DOE Order 5480.11 and the Radiological Control Manual remain in effect to the extent they are retained in individual site operating contracts or the radiological protection plans required by 10 CFR 835.

Task 6: Status reports for the Board.

IMPLEMENTATION PLAN COMMITMENT 6:

"The Department will provide quarterly status reports to the Board on the progress of completing commitments made in this implementation plan."

STATUS:

COMPLETE: Periodic reports concerning the status of progress toward achieving the commitments established in the Implementation Plan for DNFSB Recommendation 91-6 were provided to the Board. This report provides the final report on status with respect to the Department's disposition of Recommendation 91-6.

IMPLEMENTATION PLAN COMMITMENT 5.4:

"The Radiological Control Coordinating Committee will become more involved in the evaluation of implementation plans for the Radiological Control Manual. Evaluations of the adequacy of interim actions being taken by contractors prior to full implementation are being performed by the Cognizant Secretarial Officers and supported by the Radiological Control Coordinating Committee based on the information provided in the implementation plans. The status of Radiological Control Manual implementation is provided by the Cognizant Secretarial Officers to the Secretary in an Annual Report that is expected to be issued at the end of each calendar year beginning in 1993. The Department will provide a copy of the next Annual Report to the Board in the first quarterly status report following the availability of the report."

STATUS:

COMPLETE: As discussed above, the implementation of the Radiological Control Manual is no longer mandated, although substantial implementation was accomplished.

Annual reports on implementation of the Radiological Control Manual were issued for calendar years 1993 and 1994. No further reports will be issued.