



The Deputy Secretary of Energy
Washington, DC 20585

August 30, 2005

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DEFENSE NUCLEAR FACILITIES SAFETY BOARD

The Honorable A. J. Eggenberger
Chairman, Defense Nuclear Facilities
Safety Board
625 Indiana Avenue, NW, Suite 700
Washington, DC 20004

Dear Mr. Chairman:

Enclosed is the deliverable for Commitment 13 in the Department of Energy (DOE) *Implementation Plan to Improve Oversight of Nuclear Operations*, Revision 1, in response to Defense Nuclear Facilities Safety Board (Board) Recommendation 2004-1.

The enclosed *Federal Technical Capability Program (FTCP) Corrective Action Plan* identifies the Department's corrective actions to improve recruiting, developing, training, qualifying, maintaining proficiency, and retaining technical personnel to safely accomplish DOE's mission. It will also result in improved FTCP Panel effectiveness. The Corrective Action Plan also includes a prioritized list of key positions that should be filled to enhance safety from the 2004 FTCP work force analysis, including the current status of these positions. The plan has been approved and issued for implementation, effective immediately. The Department has completed the actions identified under this commitment and proposes closure of the commitment.

Please provide any further feedback to me at (202) 586-5500 or to Mr. Roy Schepens, Chairman, FTCP Panel, at (509) 376-6677.

Sincerely,

Clay Sell

Enclosure



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U. S. Department of Energy Federal Technical Capability Panel

Federal Technical Capability Program Corrective Action Plan



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U.S. DEPARTMENT OF ENERGY

Washington, D.C. 20585

August 2005

**FEDERAL TECHNICAL CAPABILITY PROGRAM
CORRECTIVE ACTION PLAN**

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FEDERAL TECHNICAL CAPABILITY PROGRAM CORRECTIVE ACTION PLAN

1.0 Executive Summary

The Federal Technical Capability (FTC) Program provides for recruitment, deployment, development, and retention of personnel with the demonstrated technical capability to safely accomplish the U.S. Department of Energy (DOE) missions and responsibilities. The FTC Panel reports to the Deputy Secretary and is responsible for overseeing and resolving issues affecting the Program and providing recommendations to senior Department officials regarding DOE technical capability.

The Department's vision described in the Implementation Plan in response to Defense Nuclear Facilities Safety Board (DNFSB or Board) Recommendation 2004-1, *Oversight of Complex, High-Hazard Nuclear Operations*, is for its technical personnel to be recognized among all federal agencies for the excellence of its federal staff. Commitment 13 of that Implementation Plan states that the Panel will "...develop corrective actions to improve recruiting, developing, training, qualifying, maintaining proficiency, and retaining technical personnel, as well as FTCP effectiveness. The Corrective Action Plan will include a prioritized list of key positions that should be filled to enhance safety."

The Panel Chairman convened an Assessment Team of senior personnel with expertise in human resources, training, recruiting, safety management, and operations to perform an assessment of the Department's performance in recruiting, developing, training, qualifying, maintaining proficiency, and retaining technically excellent personnel who are fulfilling safety responsibilities. In March 2005 a working group was established to begin reviewing previous assessment data. Based on these reviews, the working group identified hundreds of potential issues related to the recruiting, developing, training, qualifying, maintaining proficiency, and retaining technically excellent personnel who are fulfilling safety responsibilities for defense nuclear facilities. The issues were binned and further analyzed by the working group. Based on this analysis, the working group identified 18 common issues for the Assessment Team to review and consider. Appendix A provides a discussion of how prior activities, current activities and this Corrective Action Plan addresses the 18 common themes identified by the working group.

The Assessment Team met in April and May 2005 to review the results of the working group and started to develop a Corrective Action Plan. The Assessment Team developed a Corrective Action Plan that identified the following major actions:

1. *Conduct a functional workforce analysis as a basis for meeting the needs of the organization's missions for the next five years.*

2. *Establish and implement a corporate accreditation process and plan based on the Institute for Nuclear Power Operations (INPO) model for the Technical Qualification Program (TQP). The FTC Panel Chair will oversee this process for the Deputy Secretary.*
3. *Reestablish the corporate Technical Leadership Development Program (TLDP – technical intern program) and institutionalize it through commitments to funding and recruitment for classes on an annual basis.*
4. *Build on the Facility Representative program as a model for Senior Technical Safety Manager qualification program and other Functional Area qualification programs.*
5. *Revise DOE Manual 426.1-1A to incorporate and institutionalize changes in Federal Technical Capability expectations developed as part of the Department's DNFSB Recommendation 2004-1 Implementation Plan.*

The Federal Technical Capabilities Panel coordinated workforce analyses and staffing plan reports throughout the DOE complex for 2004 and earlier years. The purpose of these analyses was to provide the status of technical positions at the various site offices and Headquarters. In 2004, more specific guidance was provided by the Panel to field and headquarters offices, the analyses were performed in a more consistent manner, and the reports documented more meaningful results. In the Department's *Implementation Plan to Improve Oversight of Nuclear Operations* in response to the Defense Nuclear Facilities Safety Board Recommendation 2004-1 (2004-1 IP) Commitment 13, the Department also committed to provide a listing of key position that should be filled to enhance safety. Appendix B provides the listing of key positions/personnel shortages identified by the 2004 analyses in response to that commitment.

This Corrective Action Plan will be executed using formal and structured project management principles and methodologies. The FTCP Panel will take the Department lead in managing implementation of the corrective actions. The Deputy Assistant Secretary for Facility Safety, EH-2, has the lead for overall management and coordination of the plan, in support of the FTC Panel.

2.0 Introduction

The Federal Technical Capability (FTC) Program provides for recruitment, deployment, development, and retention of personnel with the demonstrated technical capability to safely accomplish the U.S. Department of Energy (DOE) missions and responsibilities. The FTC Panel (henceforth referred to as the Panel) reports to the Deputy Secretary and is responsible for overseeing and resolving issues affecting the Program. This includes overseeing the Senior Technical Safety Manager (STSM) Program, conducting periodic assessments of the effectiveness of the FTC Program using internal and independent experts, and providing recommendations to senior Department officials regarding DOE technical capability.

The Defense Nuclear Facilities Safety Board (DNFSB or Board) issued its Recommendation 2004-1, *Oversight of Complex, High-Hazard Nuclear Operations*, on May 21, 2004. The Department submitted Revision 1 to its Implementation Plan to the Board in June 2005. Commitment 13 of that Implementation Plan stated that the Panel would develop corrective actions to improve recruiting, developing, training, qualifying, maintaining proficiency, and retaining technical personnel, as well as FTC Panel effectiveness. The Corrective Action Plan will include a prioritized list of key positions that should be filled to enhance safety.

In March 2005 a working group was established to begin reviewing previous assessment data. The Assessment Team met in April 2005 to review the results of the working group and begin to develop a Corrective Action Plan. The corrective action report was briefed to the Panel at their face-to-face meeting in May 2005.

3.0 Scope and Methodology

To accomplish this activity, the Chairman of the FTC Panel convened an Assessment Team of senior personnel with expertise in human resources, training, recruiting, safety management, and operations to perform an assessment of the Department's performance in recruiting, developing, training, qualifying, maintaining proficiency, and retaining technically excellent personnel who are fulfilling safety responsibilities for defense nuclear facilities. The members of the Assessment Team are indicated below:

Assessment Team

Names	Positions	Area of Contribution
Robert Warther	Manager, Ohio Field Office	DOE Office of Environmental Management (EM) Representative and Assessment Team Leader
Patty Bubar	Deputy Assistant Secretary for Integrated Safety Management (ISM)/Operations Oversight	EM Representative
Jim McConnell	Chief, Defense Nuclear Safety	National Nuclear Security Administration (NNSA or NA) Representative
Ray Hardwick	Deputy Assistant Secretary for Facility Safety	DOE Office of Environment, Safety and Health (EH) Representative
Rita Franklin	Deputy Director, Office of Human Resource Management	Personnel and Human Resources
Ben Harp	Facility Representative, DOE Office of River Protection	Operations and Field Application

Prior to the Assessment Team developing a Corrective Action Plan, a working group was established to review past data and assessments of the Department's performance in recruiting, developing, training, qualifying, maintaining proficiency, and retaining technically excellent personnel who are fulfilling safety responsibilities, and identify areas where improvement is needed. Previous assessments have already identified the relevant issues. These assessments included: workforce staffing analyses; Facility Representative quarterly reports; FTC Panel quarterly reports; internal reviews such as annual ISM reviews and DOE Office of Independent Oversight and Performance Assurance (OA) independent assessments; internal evaluations, such as the NASA Columbia investigation report, and external reports and correspondence, such as those from the Board and the March 1999 Report of the "Chiles Commission" on Maintaining Nuclear Weapons Expertise. The members of the working group are indicated below:

Working Group

Names	Organization	Area of Contribution
John Swailes	EM – Consolidated Business Center	Co-Lead
Ted Wyka	DOE Office of Departmental Representative (DR) – HQ	Co-Lead
Ed Rizkalla/Jim Rosenthal	EM – HQ	EM Representative
Dan Hoag	NNSA – Y-12 Site Office	NNSA Representative
Larry Towne/Bill Pearce	Human Capital Management – HQ	Office of Management, Budget and Evaluation (ME) Representative
Jeff Cravens	NNSA – Y-12 Site Office	Facility Representative
Mike Hillman	EH – HQ	EH Representative
Mike Schoener	MAS Consultants Inc.	Technical Support

The working group met for two weeks in March 2005. The process the working group used to identify potential issues for the Assessment Team was as follows:

- Review all identified documents
- Prepare an initial list of potential issues that consists of the relevant recorded problems documented in the reviewed reports.
- Bin the issues as much as possible based on the following areas: developing, training, qualifying, maintaining proficiency, deploying, managing, leading, retaining technical expertise, and FTC Panel effectiveness.
- Conduct an initial analysis of issues, determine root causes, and identify interviews and additional actions to refine corrective actions.

After the working group completed their initial review, the Assessment Team convened to review the results of the working group and begin to identify corrective actions. The focus of the Assessment Team was to identify corrective actions that could be initiated and institutionalized over the next four years. Based on a comprehensive review, analysis and discussion, the Assessment Team identified corrective actions and sub actions. The Assessment Team presented the Corrective Action Plan to the full Panel at its face-to-face meeting in mid-May 2005. Based on feedback from the panel, including the Panel Chair, final changes were incorporated into the Corrective Action Plan and once more submitted to the panel for concurrence.

The corrective actions and sub-actions identified in this plan have been incorporated into an implementation plan that includes an identification of schedules, resources and responsibilities. The FTC Panel will take the Department lead in managing implementation of the corrective actions. The Deputy Assistant Secretary of the Office of Facility Safety, EH-2, has the lead for overall management and coordination of the plan, in support of the FTC Panel.

The corrective actions and sub-actions identified in this plan only relate to defense nuclear facilities. References to Office of Science (SC), Office of Nuclear Energy, Science and Technology (NE), and other DOE offices only include activities of those offices that involve defense nuclear facilities.

4.0 Results

Based on the methodology described above, the working group binned the relevant issues identified by the previous assessments into 18 common themes (Appendix A). The Assessment Team reviewed and analyzed the issues, considered corrective actions already taken for these past assessments, and evaluated the current state of the Department in these technical competency areas. Corrective actions were then developed for the next four years to maintain and/or improve the technical capability of the Federal workforce with safety responsibilities at defense nuclear facilities.

In addition to the actions described in this Corrective Action Plan, the Department through the cooperative efforts of the FTC Panel and DOE organizations, such as Human Capital Management, the Office of Environment, Safety and Health, and the Office of Independent Oversight and Performance Assurance has taken numerous positive actions to deal with the issues identified by the working group.

Also, many new activities are being implemented as a result of other commitments in the 2004-1 IP that addresses many of the issues identified by the working group. Examples are establishing Central Technical Authorities (CTA) reporting to the Under Secretary for National Nuclear Security Administration (NNSA) and the Under Secretary for Energy, Science and Environment (ESE); establishing the nuclear safety research program, establishing a corporate policy on safety oversight; identifying highly qualified and experienced personnel in specific programs; and commissioning an emeritus-level panel. Each of these actions will have a direct impact on the competence of technical personnel to perform their responsibilities and the organization to meet its mission needs.

Appendix A provides a discussion of how prior activities, current activities and this Corrective Action Plan addresses the 18 common themes identified by the working group.

The FTC Panel coordinated workforce analyses and staffing plan reports throughout the DOE complex for 2004 and earlier years. The purpose of these analyses was to provide the status of technical positions at the various site offices and Headquarters. In 2004, more specific guidance was provided by the Panel to field and headquarters offices, the analyses were performed in a

more consistent manner, and the reports documented more meaningful results. In the Department's response to DNFSB Recommendation 2004-1 (2004-1 IP) Commitment 13, the Department also committed to provide a listing of key position that should be filled to enhance safety. Appendix B provides the listing of key positions/personnel shortages identified by the 2004 analyses in response to that commitment.

5.0 Corrective Actions

The Assessment Team identified the following major corrective actions and corresponding sub actions to support the issues described above:

1. *Conduct a functional workforce analysis as a basis for meeting the needs of the organization's missions for the next five years.*

- 1.1. Resolve shortages identified during the 2004 FTC Program workforce analyses and prioritize a list of key positions that should be filled to enhance safety based on current and anticipated missions. Present the results to Deputy Secretary.

Lead Responsibility: FTC Panel Agents for NA, EM, NE, SC and EH

Action for Closure: Included in this CAP as Appendix B is the prioritized list of key positions rolled up from NA, EM, NE, SC and EH

Due Date: August 2005

- 1.2. Provide additional guidance on completing the 2005 FTC Program workforce analyses at defense nuclear facilities to ensure they are comprehensive, effective and assess future needs, including new positions such as Central Technical Authority, Nuclear Safety Research, and other applicable positions. This will include reevaluating the definition of critical positions. Ensure that the guidance incorporates a five year look-ahead as well as guidelines for duration and diversity of experience, timing and duration of needs, and levels of leadership competencies needed alongside the technical skills.

Lead Responsibility: FTC Panel Chair

Action for Closure: Letter to site and office managers providing additional guidance on completing the December 2005 FTC Program workforce analyses

Due Date: October 2005

- 1.3. NA, EM, NE, SC and EH conduct an updated workforce analysis for each site/office for calendar year (CY) 2005 using the revised workforce analysis methodology by December 2005 transmitted by letter to the FTC Panel by January 2006.

Lead Responsibility: FTCP Agents

Action for Closure: Workforce analyses for NA, EM, NE, SC and EH sites and Headquarters offices transmitted to FTC Panel Chair

Due Date: January 2006

- 1.4. Line management analyze and identify shortages based upon the 2005 Workforce Analyses, and prioritize a list of key positions that should be filled to enhance safety based on current and anticipated missions.

Lead Responsibility: FTC Panel Agents for NA, EM, NE, SC and EH and FTC Panel Chair for the roll-up

Action for Closure: Prioritized list of key positions rolled up from NA, EM, NE, SC and EH

Due Date: March 2006

- 1.5. Secretarial Officers resolve shortfalls from workforce analysis data.

Lead Responsibility: Program Secretarial Officers for NA, EM, NE, SC and EH

Action for Closure: Staffing Plans for NA, EM, NE, SC and EH detailing actions to be taken and due dates for completion

Due Date: June 2006

- 1.6. Update the Human Capital Management Plan guidance to ensure that the output of the 2005 FTC Program workforce analyses and resulting staffing plans, including the five year look-ahead, are used as input for any other comprehensive workforce analyses in the Department. Develop configuration control for the FTC Program workforce analysis results and the staffing plans generated.

Lead Responsibility: FTC Panel Chair

Action for Closure: Revised Human Capital Management Plan incorporating the December 2005 FTC Program workforce analysis

Due Date: March 2006

- 1.7. Develop and implement performance metrics that measure the efficacy of the actions taken to address the results of the workforce analyses. Review quarterly with the Deputy Secretary.

Lead Responsibility: Deputy Assistant Secretary, Office of Facility Safety (EH-2) and FTC Panel Chair

Action for Closure: First quarterly report to the Deputy Secretary on progress of NA, EM, NE, SC and EH staffing plans implementation

Due Date: September 2006

- 1.8. Revise DOE Manual 426.1-1A to institutionalize the workforce analysis process.

Lead Responsibility: FTC Panel Chair

Action for Closure: Approved revision of DOE Manual 426.1-1A incorporating the revised workforce analysis and staffing plan process and reporting requirements

Due Date: December 2006

2. *Establish and implement a corporate accreditation process and plan based on the Institute of Nuclear Power Operation (INPO) model for the Technical Qualification Program (TQP). The FTC Panel Chair will oversee this process for the Deputy Secretary.*

- 2.1. Develop an accreditation process for DOE TQPs based on the INPO model for accreditation of commercial nuclear power training and qualification programs. Criteria for TQP accreditation will be developed using guidance already developed for assessments of the TQP as provided in DOE Manual 426.1-1A. This includes establishing the TQP accreditation review board and review team selection criteria. Both the review board and review team(s) are expected to be small select groups of qualified individuals led by the FTC Panel Chair for the Deputy Secretary.

Lead Responsibility: Deputy Assistant Secretary, Office of Facility Safety (EH-2)
Action for Closure: FTC Panel approved interim TQP accreditation process and Criteria Review and Approach Documents (CRADS) based on the INPO model for accreditation of commercial nuclear power training and qualification programs and guidance already developed for assessments of the TQP as provided in DOE Manual 426.1-1A. The NNSA and ESE Central Technical Authorities will review both the accreditation process and CRADS
Due Date: December 2005

- 2.2. Establish a schedule for accreditation of all defense nuclear facilities site/office TQPs approved by the FTCP.

Lead Responsibility: Deputy Assistant Secretary, Office of Facility Safety (EH-2)
Action for Closure: FTC Panel approved schedule for accreditation of NA, EM, NE, SC and EH site/office TQPs
Due Date: February 2006

- 2.3. Ensure that the accreditation process is piloted at one site/office.

Lead Responsibility: Deputy Assistant Secretary, Office of Facility Safety (EH-2)
Action for Closure: FTC Panel report to the Deputy Secretary on the pilot TQP accreditation process and path forward based on lessons learned
Due Date: June 2006

- 2.4. Revise the process and criteria based on the lesson learned from the pilot.

Lead Responsibility: Deputy Assistant Secretary, Office of Facility Safety (EH-2)
Action for Closure: FTC Panel approved revised interim process and criteria
Due Date: July 2006

- 2.5. Institutionalize the accreditation process through revision of DOE Manual 426.1-1A. This will replace the existing TQP assessment requirements in DOE Manual 426.1-1A

Lead Responsibility: Deputy Assistant Secretary, Office of Facility Safety (EH-2)
Action for Closure: Approved revision to DOE Manual 426.1-1A incorporating the TQP accreditation process
Due Date: December 2006

- 2.6 Complete accreditation of all DOE TQPs.

Lead Responsibility: Deputy Assistant Secretary, Office of Facility Safety (EH-2)
Action for Closure: Report to the Deputy Assistant Secretary documenting that all DOE TQPs have been reviewed for accreditation and are accredited or completing actions identified to address areas for improvement identified by the Accreditation Board.
Due Date: In accordance with the schedule approved by the FTC Panel

3. *Reestablish the corporate Technical Leadership Development Program (TLDP – technical intern program) and institutionalize it through commitments to funding and recruitment for classes on an annual basis.*

- 3.1. Establish the overall corporate champion and line champions for the corporate technical intern program from each main line office.

Lead Responsibility: FTC Panel Chair
Action for Closure: Letter from the FTC Panel Chair to EM-1, NA-1, NE-1, SC-1 and EH-1 identifying the corporate champion and line champions for the corporate technical intern program.
Due Date: October 2005

- 3.2. Evaluate reasons past intern programs lacked continuity and commitment and prepare a report that provides recommendations to prevent reoccurrence, including appropriate secretarial guidance.

Lead Responsibility: Office of Facility Safety (EH-2)
Action for Closure: A report to the Deputy Secretary that provides recommendations to prevent reoccurrence, including appropriate secretarial guidance.
Due Date: November 2005

- 3.3. Develop and publish interim guidance on the development and conduct of the corporate technical intern program.

Lead Responsibility: Deputy Assistant Secretary, Office of Facility Safety (EH-2) and FTC Panel Chair
Action for Closure: FTC Panel Chair memo to FTC Panel Agents providing interim guidance on the development of the corporate technical intern program.
Due Date: January 2006

- 3.4. Develop the technical intern program and planning expectations with input and direct involvement from line management.

Lead Responsibility: Deputy Assistant Secretary, Office of Facility Safety (EH-2)
Action for Closure: Approved revision to DOE Manual 426.1-1A incorporating the technical intern program and a description of the technical intern program provided to the Office of Human Capital Management for inclusion in the next planned update to the DOE Human Capital Management Strategic Plan.
Due Date: December 2006

- 3.5. Establish and maintain a budget item to ensure a corporate investment in the technical intern program.

Lead Responsibility: Deputy Assistant Secretary, Office of Facility Safety (EH-2)
Action for Closure: Approved budget for incorporating the corporate intern program.
Due Date: October 2006

- 3.6. Recruit the first corporate technical intern class based on the results of the 2005 FTC Program Workforce Analysis.

Lead Responsibility: Deputy Assistant Secretary, Office of Facility Safety (EH-2)
Action for Closure: 75% of recruits are working for the Department and have been assigned to line organizations.
Due Date: May 2008

- 3.7. Conduct the first corporate technical intern class.

Lead Responsibility: Deputy Assistant Secretary, Office of Facility Safety (EH-2)
Action for Closure: Course begins on schedule
Due Date: September 2008

4. *Build on the Facility Representative program as a model for Senior Technical Safety Manager (STSM) qualification program and other Functional Area qualification programs.*

- 4.1. Establish Departmental champion for the STSM Program.

Lead Responsibility: FTC Panel Chair
Action for Closure: Letter from the FTC Panel Chair to EH-1 designating the Deputy Assistant Secretary, Facility Safety (EH-2) as the Departmental champion for the STSM Program.
Due Date: September 2005

- 4.2. Review and revise as applicable the STSM qualification standard to ensure it contains appropriate and adequate qualification and re-qualification requirements.

Lead Responsibility: FTC Panel Chair
Action for Closure: Approved STSM Qualification Standard
Due Date: December 2005

- 4.3 Develop a Department-wide STSM training course to prepare potential STSMs for qualification.

Lead Responsibility: Director, National Training Center, Office of Security and Safety
Performance

Action for Closure: Course developed

Due Date: March 2006

- 4.4 Conduct the first STSM training program

Lead Responsibility: Director, National Training Center, Office of Security and Safety
Performance

Action for Closure: Course implemented

Due Date: June 2006

- 4.5. Establish a Department-wide, formal and rigorous final testing program to validate STSM qualification

Lead Responsibility: FTC Panel Chair

Action for Closure: Implement a final STSM qualification process which standardizes the final testing process across the complex and validates qualification as Senior Technical Safety Manager

Due Date: June 2006

- 4.6 Identify Departmental Champions for the core science and engineering Functional Area Qualification programs. Develop a schedule to prioritize, review and upgrade, as appropriate, these functional area qualification programs to ensure they contain appropriate and adequate qualification and re-qualification requirements.

Lead Responsibility: FTC Panel Chair

Action for Closure: Letter from the FTC Panel Chair identifying Departmental Champions for the core science and engineering Functional Area Qualification Programs. This letter will also establish a schedule for review of these Functional Area Qualification Programs.

Due Date: April 2006

5. *Revise DOE Manual 426.1-1A to incorporate and institutionalize changes in Federal Technical Capability expectations developed as part of the Department's DNFSB Recommendation 2004-1 Implementation Plan.*

Lead Responsibility: FTC Panel Chair

Action for Closure: For those changes in Federal Technical Capability identified by the Department's 2004-1 project team that need to be institutionalized in the FTC Program manual, revise DOE Manual 426.1-1A.

Due Date: Revise the FTC Program Manual within one year after necessary changes are identified.

6.0 Project Management

The corrective actions and sub actions identified in this plan have been incorporated into an implementation plan that includes an identification of schedules, resources and responsibilities. The FTC Panel will take the Department lead in managing implementation of the corrective actions. The Deputy Assistant Secretary for Facility Safety, EH-2, has the lead for overall management and coordination of the plan, in support of the FTC Panel.

APPENDIX A

FTC Program-Related Common Issues from Past Assessments Identified by the Working Group

The working group binned the relevant issues identified by the previous assessments into the following 18 common themes:

1. The Department is unprepared for the significant loss of technical competencies as a result of the eligible retirement of 30-50% of employees over the next five years.
2. The Department lacks an effective corporate recruitment program that takes into account current and future constraints.
3. There are weaknesses in technical competence in DOE.
4. DOE training and development programs are ineffective in enhancing technical competencies of employees.
5. DOE is lacking effective processes to capture existing in-house technical capabilities and knowledge.
6. Ineffective linkage between position descriptions, technical qualifications, performance standards, and IDPs.
7. The Technical Qualification Program does not have sufficient rigor, discipline, and realistic schedules.
8. There is a perception of inadequate technical competency in DOE management and staff.
9. There is insufficient or unequal participation of personnel in the TQP.
10. DOE has not adequately implemented a Defense Nuclear Facility-wide integrated workforce analysis to identify current technical capabilities and future needs.
11. DOE has not developed adequate succession plans for technical staff and managers.
12. Improper placement of technical talent and personnel (the right people in the right places at the right times).
13. Management technical competence is less than adequate
14. Inadequate management involvement in employee qualification and development.
15. Less than adequate management involvement in evaluating implementation of training, qualification and development programs
16. Management involvement in follow-up activities is less than adequate
17. DOE has failed to create an environment that encourages retention of federal technical personnel.
18. The FTCP has not effectively communicated and followed up on issues with technical competencies to DOE executive management.

There are numerous tools currently available to DOE managers to help recruit, retain, and/or enhance the technical capability of currently employed DOE personnel to ensure that there is the necessary technical workforce available to meet mission needs. Listed below are a few of these tools along with the activities underway through this Corrective Action Plan and other DNFSB 2004-1 Implementation Plan commitments that will have a direct impact on the competence of technical personnel to perform their responsibilities and the organization to meet its mission needs. The specific issue identified by the working group that these tools or activities address is also annotated.

Recruitment - Each of the areas below is a part of the Departments corporate approach to meeting its recruitment needs (Issues 1, 2).

- **Recruitment Compensation Flexibilities** – Agencies have considerable discretionary authority to provide additional direct compensation in certain circumstances to support their recruitment, relocation, and retention efforts, in the form of recruitment incentives in order to be more competitive with salaries in the labor market; hiring Federal civilian retirees, reimbursing travel expenses for interviews, advance payments for new appointees, repayment of student loans, use of critical position pay authority, and payment of expenses for travel and shipment of household goods for relocation of new hires. Many of these options have been effectively used to recruit personnel for the various technical positions throughout the DOE complex (e.g., Facility Representatives (FRs), Safety System Oversight positions, Authorization Basis personnel, fire protection engineers, etc).
- **Short-term Staffing Options** – A variety of options are available and have been used to upgrade technical capability in the Department. These range from using the Excepted Service Appointment Authorities to bringing in temporary assignees from state and local governments, colleges and universities, Indian tribal governments, and other not-for-profit organizations under the Intergovernmental Personnel Act (IPA) Mobility Program. DOE has three Excepted Service Appointment Authorities available as important tools to recruit and retain high-quality staff. Use of the excepted service authorities can expedite the hiring process and provide pay flexibilities to enhance recruitment and retention of key technical and other critical staff. They also support the Department's commitment to achieve the highest standards of scientific, engineering, technical, and professional excellence in its workforce.
- **DOE Career Intern Program** – This 2-year corporate entry-level developmental program maximizes use of new hiring authorities and pay flexibilities to attract and retain highly qualified, diverse technical and administrative/management candidates. It provides work and developmental training and experiences that provide a broad overview of the breadth, complexity, and importance of DOE's mission. A dual-track feature allows participants to initially take common core training, with subsequent training divided into scientific/engineering and business tracks according to the participants'

target position. This program has had some issues in the past, therefore due to a recognition by NNSA that there was an immediate need for technical personnel, NNSA has established a NNSA-specific intern program with 30 people currently enrolled. In addition, the FTCP recognizes that this needs to be expanded so this Corrective Action Plan includes a commitment by the FTCP and Deputy Assistant Secretary for the Office of Facility Safety (EH-2) and the Office of Human Capital Management (HR) to reestablish the corporate Technical Leadership Development Program and institutionalize it through commitments to funding and recruitment for classes on an annual basis.

- **Central Technical Authority (CTA) – DNFSB Recommendation 2004-1 Implementation Plan (Commitments 1, 2, and 3)** states the Department's intention to assure that consistent evaluations of the flow-down of key nuclear safety requirements is performed and that nuclear safety performance meets or exceeds safety performance. Therefore, the Department has established two CTAs (NNSA and a ESE) and supporting organizations. To meet the needs, a staffing analysis will be performed and positions will be advertised and filled with the appropriate technical expertise.
- **Nuclear Safety Research Program – DNFSB Recommendation 2004-1 Implementation Plan (Commitments 6, 7 and 8)** states the Department will establish an integrated corporate program for assessing, prioritizing, and integrating and managing applicable nuclear safety research. This will require hiring key critical staff positions that support the function.
- **Student Career Experience Program –** More commonly known as the “Co-op” program, this entry-level program is a structured, year-round program that allows students at all educational levels (high school, college, graduate school, or certificate study) to perform work within the Department related to their academic program. There are a number of colleges and universities, high schools, and certificate programs whose students meet eligibility requirements. Students must be enrolled in school, and may work on a part-time or full-time basis. Upon completion of the educational and work requirements students may be non-competitively converted to permanent status.
- **Presidential Management Fellows Program (PMF) –** The PMF program is an entry-level career development and training program designed to attract outstanding individuals at the graduate degree level who have an interest in, and commitment to, a career in public service. Candidates are nominated by the Dean, Director or Chair of their academic program during their year of graduation and undergo a rigorous application and screening process conducted by the Office of Personnel Management. Once candidates are “finalists,” they are eligible to be appointed quickly and directly by any Federal agency.

Retention - Each of the areas below are a part of the Departments corporate approach to meeting its retention needs. (Issues 1, 5, 10, 11)

- **Retention Compensation Flexibilities** – Agencies have considerable discretionary authority to provide additional direct compensation in certain circumstances to support their retention efforts, such as retention allowance (individual and group) which may be paid to high-quality employees who are likely to leave the Federal Government and whose services the Department considers essential. A successful example is the group retention allowance provided to the Facility Representatives at select DOE sites.
- **Succession Planning/Workforce Analysis** – DOE Manual 426.1-1A, Federal Technical Capability Program, requires the annual review of the site/office staffing situation and development of a workforce analysis/staffing plan. The FTCP reviews the analysis/staffing plan and makes recommendations to the Secretary of Energy, Deputy Secretary and senior Department officials regarding DOE technical capability. Another tool, as part of the President’s Management Agenda that the Department is using, is a number of skills assessments to assist in identification of workforce skill gaps and preparing for succession planning. The FTCP has continued to improve the guidance on preparing the workforce analyses and staffing plans for all sites with defense nuclear facilities; and this Corrective Action Plan includes a commitment to take the requirement to the next level by requiring it to be a functional workforce analysis for meeting the needs of the organizations mission for the next five (5) years.
- **Awards Programs** – Agencies have authority to design extensive awards programs that include cash awards, honorary awards, informal recognition awards, and time-off awards. Agencies can give these awards to Federal employees to recognize employee and group performance, and can design incentive programs with awards granted because an individual or a group achieved pre-established goals.
- **Work Arrangements and Work/Life Policies** – The Federal Government is a leader in providing family-oriented leave policies and flextime and telecommuting arrangements to support a positive work culture and environment. This includes the use of flexible work schedules and telecommuting; leave programs (leave sharing, leave banks, leave for medical conditions and family responsibilities); part-time employment and job sharing; Employee Assistance Programs; Employee Health and Wellness Programs; on-site child development centers; and information and referral services. The Government is committed to helping employees meet the responsibilities of work and home life.

Training, Qualifying, and Maintaining Proficiency - Each of the areas below are a part of the Departments corporate approach to meeting its training, qualifying and proficiency needs. (Issues 3, 4, 5, 6, 7, 8, 9, 13, 14, 15, 16, 17, 18)

- **Training and Development Programs** – Options ranging from detailing employees in 120-day increments to other positions within the Department to Tuition Assistance or paying for academic coursework to develop an employee's knowledge and skill in an area related to an employee's official duties. If in accomplishing this training, an employee earns an academic degree, the degree is an incidental by-product of the training. Adjusting employees' work schedules for educational purposes is a good opportunity to incentivize critical staff to stay and possibly train for a “new” career after retirement. There are also formal Professional Development Opportunities, such as the Mentoring Program, SES Candidate Development Program, Certificate Program, Executive Potential Program, and Excellence in Government Fellows Program available for use.
- **Payment for Professional Credentials** – Expenses may be paid for employees of eligible occupations to obtain initial and subsequent renewals of professional credentials, including accreditations, state-imposed and professional licenses and certifications, and examinations to obtain such credentials when payment contributes to recruitment, retention, career development, or worker transition objectives.
- **Technical Qualification Program (TQP)** – In 1998, as part of the revised Implementation Plan responding to DNFSB Recommendation 93-3, the Secretary of Energy directed the formation of a working group of senior line managers reporting to the Deputy Secretary to oversee and resolve issues, associated with recruiting, deploying, developing, and retaining Departmental technical personnel. The Federal Technical Capability Panel (FTCP) as senior management representatives from each Site/Headquarters office in the Department with defense nuclear facilities and personnel, is chartered to pursue opportunities to deal with the Departments concerns with assuring that its technical workforce are ready and able to meet the Department's goals, and that each site's and office's TQPs have sufficient rigor. These TQPs specifically apply to DOE technical employees whose duties and responsibilities require them to provide assistance, guidance, oversight, or evaluation of contractor activities that could impact the safe operation of a defense nuclear facility.

Recent activities that the Panel has been involved in include working with the Office of DOE Independent Oversight and Performance Assurance, the NNSA Administrator, and Office of Environment, Safety and Health to establish a “Center of Excellence in Security and Safety Professional Development” (aka National Training Center) for the Department with expanded training services to include safety; developing NNSA's Safety Professional Career Training, and developing the Authorization Basis Academy/curriculum. The Panel continues to pursue other opportunities to improve the technical competency of Departmental personnel. One such recent activity was the revision of more than 30 Functional Area Qualification Standards to improve their

technical content and rigor, assure their consistency in application across the DOE Complex, and establish a standard for personnel performing software quality assurance responsibilities.

A prime example of a mature program that meets the expectations and standards set by the Department is the Facility Representative program. The personnel in this program are some of the best and brightest representing the Department. Another program that is improving the technical capability of the Department is the Safety System Oversight program. These personnel are a key technical resource qualified to oversee contractor management of safety systems at defense nuclear facilities. Unlike Facility Representatives, who are responsible for monitoring the safety performance of the Department's defense nuclear facilities and day-to-day operational status, staff members assigned to safety system oversight are responsible for overseeing assigned systems to ensure that they will perform as required by the safety basis and other applicable requirements. In the past two years, the requirements and qualification standards have been institutionalized in the FTCP Manual for consistent application across the complex; positions have been advertised, if needed; personnel have been hired/reassigned into positions; personnel are being qualified via a process similar to the Facility Representative qualification; assessments of the sites have been performed to assure that sites are enacting the requirements and staffing is consistent with the unique conditions of the sites; and assessments are currently being performed to verify implementation, in-place staffing, qualification, and performance meets FTCP expectation.

Most recently, the Department is pursuing efforts to enhance the capability of Federal personnel performing authorization basis work due to the importance and technical difficulty of the work, and its foundation to all safety management activities. The FTCP has formed a working group of experts from across the complex who has reviewed current practices and experience in performing DOE authorization basis reviews in order to identify good practices and opportunities for improvement. The working group was tasked to identify specific actions to be pursued to upgrade and enhance the capability and qualifications of DOE authorization basis personnel, to improve the training and development process, and to enhance the pipeline of Federal authorization basis personnel. The working group developed an action plan to define specific objectives, responsibilities, schedules, and resources required. The action plan is undergoing FTCP review.

In addition, the NNSA, through the NNSA Service Center, has commenced developing study guides, a question bank for FAQs-level exams, and course material to hold classes. The NNSA Service Center is responsible for providing subject matter experts to NNSA Site Offices, the Service Center, and NNSA Headquarters to enable successful accomplishment of their respective national security, facilities engineering, environmental management, and ES&H objectives.

As part of the FTCP's mission to continually improve the technical qualification programs for Department personnel, this Corrective Action Plans includes a commitment to build on the Facility Representative program as a model for the Senior Technical Safety Manager qualification program and the other functional area qualification programs. Action 4.0 describes the specific actions.

Key to successfully managing the TQP, is communicating data with DOE management regarding the current state of the organizations' technical competency. Therefore, the FTCP developed a quarterly performance indicator and associated report that tracks the qualification of technical personnel by organization. The DOE goal is to exceed an 80% fully qualified rate for all personnel in the TQP. Currently, the DOE qualification rate is 84%. The report is provided to the Deputy Secretary, Under Secretary for Energy, Science and Environment; the Administrator, NNSA; the Assistant Secretary for Environmental Management and Environment, Safety, and Health; and the Directors/Managers of the field and Headquarters offices responsible for defense nuclear activities. The Chairman of the FTCP and Agents communicate with DOE management on relevant issues in various venues, as the situation requires.

- **Accreditation** – Key to assuring that the Department is able to meet its goals for defense nuclear facilities is evaluating its training and qualification programs. Therefore, through this Corrective Action Plan, the Department will establish a corporate accreditation process based on the Institute of Nuclear Power Operation (INPO) model. The accreditation will validate whether sites' and offices' TQPs are effective in assuring that the requisite technical capability is available to meet mission needs. The accreditation review will validate whether personnel documentation, such as position descriptions, technical qualifications, performance standards and/or individual development plans are adequately defined to assure that technical personnel and the organization support needs for assuring technical competency; that technical personnel are receiving the necessary training; and management is involved in employee qualification and development. The accreditation review board and review team(s) is expected to be small select groups of qualified individuals led by the FTCP Chair for the Deputy Secretary. The NA and ESE Central Technical Authorities will review both the accreditation process and Criteria Review and Approach Documents.
- **Central Technical Authorities (Commitments 1, 2 and 3), Nuclear Safety Research Function (Commitments 6, 7 and 8), Highly Qualified and Experienced Personnel (Commitment 11), Nuclear Executive Level Training (Commitment 12), and Emeritus-Level Panel (Commitment 14)** – These commitments in DNFSB Recommendation 2004-1 Implementation Plan directly impact the quality of the Department's workforce because they involve the need for ensuring/providing technically competent personnel in specific areas of expertise. To meet that goal, the level of expertise must be defined, training provided as needed such as through the Nuclear Executive Level Training, and performance evaluated. In addition, the Department will charter an emeritus-level panel with experience and expertise in Federal and large

commercial technical organizations to review the Department's performance toward achieving its vision of technical excellence, and make recommendations to the Secretary for improvements. This Corrective Action Plan requires revising FTCP Manual 426.1-1A in order to institutionalize DNFSB Recommendation 2004-1 commitments that affect Federal Technical Capability.

- **List of highly qualified and experienced personnel (Commitment 11)** – In addition to this Corrective Action Plan (Commitment 13), the FTCP had identified highly qualified and experienced personnel in the specific functional areas of Criticality, Fire Protection Engineering, Civil/Structural Engineering, Nuclear Explosives Safety, and Safety Software Quality Assurance who will assist the Department in improving the overall technical capability of its technical workforce. These individuals will serve as the primary point of contact for reviewing and updating the technical content in the functional area qualification standards and serving as examining officials in the qualification of candidates. This action communicates the importance of retaining federal technical personnel.

Executing the activities and actions dictated by this Corrective Action Plan, along with the other DNFSB 2004-1 Implementation Plan commitments described above will improve the effectiveness and importance of the FTCP.

APPENDIX B

FTC Program Key Safety Position Status

In the Department's "Implementation Plan to Improve Oversight of Nuclear Operations" in response to the Defense Nuclear Facilities Safety Board Recommendation 2004-1 (2004-1 IP) Commitment 13, the Department committed to provide a listing of key position that should be filled to enhance safety. This Appendix is provided in response to that commitment.

The Federal Technical Capabilities Panel coordinated workforce analyses and staffing plan reports throughout the DOE complex for 2004 and earlier years. The purpose of these analyses was to provide the status of technical positions at the various site offices and Headquarters. In 2004, more specific guidance was provided by the Panel to field and headquarters offices, the analyses were performed in a more consistent manner, and the reports documented more meaningful results. The personnel shortages identified by the 2004 analyses are listed below with the current status of those shortages.

Location	Position	Number Required	Notes
Carlsbad Field Office	Senior Technical Safety Manager (STSM)	1	High priority. Filled. STSM qualification initiated.
DOE HQ (EM)	Civil/Structural	1	High priority. Filled.
DOE HQ (EM)	Electrical Engineer	1	Contractor available as required.
DOE HQ (EM)	Industrial Hygiene	1	High priority. Vacant.
Idaho Operations Office	Facility Representative	3 EM / 2 NE	Recruitment in progress.
Livermore Site Office	Facility Representative	4	High priority/two are filled.
Los Alamos Site Office	Facility Representative	5	High priority.
Los Alamos Site Office	Readiness Review Program Manager	1	High priority. Vacancy announcement being prepared; position approved to be staffed.
Los Alamos Site Office	Criticality Safety Engineer	1	High Priority. Vacancy due to attrition. Service Center providing limited support.
Los Alamos Site Office	Facility Representatives	6	High priority.
Los Alamos Site Office	System Safety Oversight Engineers	4	High Priority. Two FTEs on staff, remaining support being provided by the Service Center; no immediate plans to fill the positions.

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Location	Position	Number Required	Notes
Los Alamos Site Office	Authorization Basis Safety Analysts	2	High Priority. Vacancy announcement being prepared; positions approved to be staffed.
Los Alamos Site Office	Health Physicists	1	Moderate Priority. One FTE on staff, no immediate plans to fill the second position.
Los Alamos Site Office	Industrial Hygienist	1	Moderate Priority. One FTE on staff, no immediate plans to fill the second position.
Los Alamos Site Office	Safety Engineer	1	Moderate Priority. One FTE on staff, no immediate plans to fill the second position.
Los Alamos Site Office	Software Quality Engineer	1	Moderate Priority. Currently being covered by existing staff as a collateral duty, no immediate plans to fill the position.
Nevada Site Office	Facility Representative	2	High priority.
Oak Ridge Operations Office (EM)	Facility Representative	5	High priority/interviews completed/offers by end of August.
Office of River Protection	Criticality Safety	1	Adequate support provided by Richland Operations Office.
Office of River Protection	Electrical Engineer	1	Adequate support provided by instrumentation & controls engineer.
Office of River Protection	Environmental Compliance	1	Adequate support provided by Richland Operations Office.
Office of River Protection	Facility Representative	2	High priority. Filled. ~50% qualified.
Office of River Protection	Fire Protection	1	High priority. Filled by transfer from Richland Operations Office.
Office of River Protection	Industrial Hygiene	1	High priority. Filled by return from Ph.D program.
Office of River Protection	Industrial Hygiene	1	Contractor available as required.
Office of River Protection	Nuclear Safety/Documented Safety Analysis	1	High priority. Filled by hire from Richland Operations Office.
Pantex Site Office	Facility Representative	2	High priority.
Richland Operations Office	Facility Representative	2	High priority. Filled. Qualification in progress.
Richland Operations Office	Industrial Hygiene	1	High priority. Reassigned internally.
Richland Operations Office	Nuclear Safety	1	Contractor in place.
Richland Operations Office	Nuclear Safety/Documented Safety Analysis	1	High priority. Temporary need, contractor in place.

Location	Position	Number Required	Notes
Sandia Site Office	Facility Representative	3	High priority.
Savannah River Site Office	Facility Representative	2	High Priority/selection in progress on one position and about ready to advertise the second position.
Savannah River Site Office	Safety System Oversight	2	High Priority/selection in progress on one position and about ready to advertise the second position.
Y-12 Site Office	Emergency Management Engineer	1	High Priority/Filled.
Y-12 Site Office	Facility Representative	1	High Priority/Filled.
Y-12 Site Office	Project/Program Manager	1	High Priority. Vacancy announcement is out. Expected to be filled by October 1, 2005.

The Action Plan defined in the body of this document addresses actions associated with the next annual workforce analysis and staffing plan reports. In summary, the FTC Panel Chairman will provide updated guidance incorporating the lessons learned from previous analyses. The guidance will incorporate a five year look-ahead as well as guidelines for duration and diversity of experience, timing and duration of needs, and levels of leadership competencies needed alongside the technical skills. The analysis will include the recently created Central Technical Authority and Nuclear Safety Research staffs. The analysis results will be summarized in a consistent format to facilitate addressing the needs on a priority basis. Staffing Plans will be updated and vacancies will be tracked.