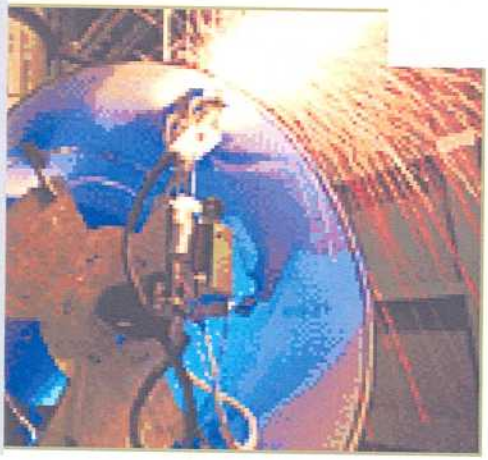
DEFENSE NUCLEAR FACILITIES SAFETY BOARD



FY 2004 PERFORMANCE AND ACCOUNTABILITY REPORT

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Chapter 1
Management's Discussion and Analysis

Chairman's Message

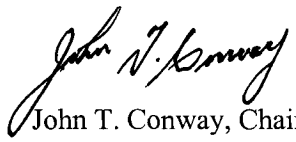
On behalf of the Members and staff of the Defense Nuclear Facilities Safety Board (DNFSB), I am pleased to submit our *Performance and Accountability Report* (PAR) for FY 2004. While the DNFSB has prepared and published previous Annual Performance Reports as required by the Government Performance and Results Act of 1993 (GPRA), and comprehensive annual reports to the Congress covering the DNFSB's health and safety oversight mission since 1990, this is the first year that the DNFSB has been required to prepare a PAR report.

The primary purpose for the DNFSB's existence is to significantly reduce the chances of failed programs and devastating accidents from becoming a reality in the Department of Energy's (DOE) defense nuclear facilities and operations. Having to abandon or extensively rebuild a newly constructed facility such as the DOE Waste Treatment Plant at the Hanford Site in Washington, costing billions of dollars due to an undiagnosed safety flaw in the design or construction process would be inexcusable. Unimaginable would be an accidental detonation of a nuclear weapon in the evaluation, maintenance, or dismantlement process, resulting in catastrophic impacts on lives and property, as well as on our Nation's nuclear deterrent capability. The DNFSB is the last line of defense in preventing costly mistakes and tragic accidents from occurring in very complex, dangerous DOE programs.

During FY 2004, the DNFSB has made significant progress in ensuring that the public and the workers at or near DOE defense nuclear facilities are adequately protected. Considering that the DNFSB is a small agency with an employment ceiling of 100 FTEs and budget authority of $19.4 million in FY 2004, I am proud to recognize the sustained and dedicated effort of our staff. The detailed performance reports that appear later in this document attest to the accomplishments of our small but highly talented staff. Given the scope and significance of our health and safety oversight responsibilities, the performance accomplishments far exceed the level of resources invested. Based on personal observation and reasonable assurances provided by internal managers, I believe that the public resources entrusted to the DNFSB are well managed and wisely used.

The future holds many managerial challenges for the DNFSB, both in terms of technically complex health and safety issues involving the disassembly, refurbishing, reassembly, and re-certifying nuclear weapons and components, as well the review of new DOE defense nuclear facilities in the critical design and construction phases. Moreover, the fiscal challenges involving adequate funding for oversight activities and human capital issues will become critical to the viability of future DNFSB operations.

The DNFSB is committed to improving the safety, security, and reliability at our Country's most sensitive defense nuclear facilities where our nuclear arsenal is maintained, and hazardous nuclear materials and components are placed in more secure and stable storage configurations. Our standard of excellence in carrying out this important mission will mirror the best of American excellence, values, and ideals. Our Nation deserves nothing less.



John T. Conway, Chairman

February 2, 2005

INTRODUCTION

This Performance and Accountability Report (PAR) covers the DNFSB's oversight activities and associated resource expenditures for the period from October 1, 2003 through September 30, 2004 (FY 2004). This report was prepared pursuant to the requirements of the Accountability of Tax Dollars Act of 2002 and Office of Management and Budget (OMB) instructions on the preparation of PAR reports. FY 2004 is the first year that PAR reporting requirements have been required of small agencies such as the DNFSB.

The Government Performance and Results Act of 1993 (GPRA) requires each agency to prepare and submit a strategic plan establishing long-term programmatic, policy, and management goals. The Defense Nuclear Facilities Safety Board's (DNFSB) *Strategic Plan for FY 2003-2009* has been made available on the Internet at www.dnfsb.gov. In addition, agencies are also required to develop a performance budget with annual performance objectives which indicate the progress toward achievement of the strategic plan's goals and objectives. The DNFSB's performance objectives for FY 2005 and FY 2006, as well as representative accomplishments for FY 2001 through 2004, are included in its FY 2006 Budget Request to the Congress in accordance with the requirements of OMB Circular A-11. The final GPRA requirement to submit an annual performance report is included in this PAR.

Chapter 1, *Management Discussion and Analysis*, provides an overview of DNFSB operations, and is divided into five sections: *About the DNFSB* describes the agency's mission, organization structure, and the four major performance goals of the DNFSB; *Future Challenges* includes a review of upcoming issues; *Program Performance Overview* discusses the DNFSB's success in accomplishing its performance goals; *Financial Performance Overview* provides highlights of DNFSB's financial position and audit results; and *Systems, Controls, and Legal Compliance* describes the agency's compliance with key legal requirements such as the Federal Information Security Management Act (FISMA) and internal controls.

ABOUT THE DNFSB

The DNFSB, an independent executive branch agency, is charged with providing technical safety oversight of the Department of Energy's (DOE) defense nuclear facilities and activities in order to protect the health and safety of the public and workers. Congress established the DNFSB in September 1988 in response to growing concerns about the level of health and safety protection that DOE was providing the public and workers at defense nuclear facilities. In so doing, Congress sought to provide the public with added assurance that the defense nuclear facilities required to maintain the nation's nuclear weapons stockpile are being safely designed, constructed, operated, and decommissioned. The DNFSB commenced operations in October 1989 with the Senate confirmation of the five Board Members.

Organization

The DNFSB is headed by a five full-time Board Members who, by statute, must be respected experts in the field of nuclear safety with demonstrated competence and knowledge relative to independent investigations

and oversight. Two members of the DNFSB are designated by the President to serve as Chairman and Vice Chairman respectively. Each DNFSB member is appointed by the President, with the advice and consent of the Senate, and serves a term of five years. The Chairman serves as the chief executive officer of the DNFSB.

The DNFSB's headquarters facility is located in downtown Washington, D.C., in proximity to the DOE headquarters facility. Our headquarters location was selected to facilitate the interface between DNFSB and DOE management officials and staff, and has proven to be beneficial for the timely exchange of information as the DNFSB conducts its independent oversight mission.

The DNFSB maintains its on–site safety oversight of defense nuclear facilities by assigning experienced technical staff members to full–time duty at priority DOE sites. As of September 30, 2004, nine full–time site representatives were stationed at six DOE sites: 1) Pantex Plant to oversee nuclear weapons activities, including the weapons stockpile stewardship and weapons disassembly programs; 2) Hanford Site to monitor waste characterization and stabilization and facility deactivation; 3) Savannah River Site (SRS) to monitor the DOE's efforts to deactivate facilities, stabilize waste materials, and store and process tritium; 4) Oak Ridge Y–12 Complex to monitor safety and health conditions at Y-12 and other defense nuclear facilities in the area; 5) Los Alamos National Laboratory (LANL) to advise the DNFSB on overall safety and health conditions at LANL, and to participate on DNFSB reviews and evaluations related to the design, construction, operation, and decommissioning of LANL defense nuclear facilities; and 6) Lawrence Livermore National Laboratory (LLNL). During FY 2004, the DNFSB reviewed the potential risks to the public and the environment at LLNL and stationed a full-time site representative at the site.

The Site Representatives Program provides a cost–effective means for the DNFSB to closely monitor DOE activities, and to identify health and safety concerns promptly by having on–site staff conducting firsthand assessments of nuclear safety management at the priority sites to which they have been assigned. Site representatives regularly interact with the public, union members, congressional staff members, and public officials from federal, state, and local agencies.

The DNFSB's budget for FY 2004 was $19.4 million and 100 full-time equivalent staff. The DNFSB's health and safety oversight activities are funded exclusively from a direct appropriation included in the annual Energy and Water Development Appropriation Act. No other cost recovery mechanisms such as fees, annual charges, or reimbursement from the DOE are authorized for the DNFSB.

Safety Oversight Responsibilities

The DNFSB's specific duties and responsibilities to protect the health and safety of the public and the workers at DOE's defense nuclear facilities are delineated in its enabling statute, 42 U.S.C. § 2286, *et. seq.*, in which the DNFSB shall:

1. Review and evaluate the content and implementation of the standards relating to the design, construction, operation, and decommissioning of DOE's defense nuclear facilities and recommend to the Secretary of Energy those specific measures that should be adopted to ensure that public health and safety are adequately protected.

2. Investigate any event or practice at a DOE defense nuclear facility which the DNFSB determines has adversely affected, or may adversely affect, public health and safety.

3. Have access to and may systematically analyze design and operational data, including safety analysis reports, from DOE defense nuclear facilities.

4. Review the design and construction of new DOE defense nuclear facilities and recommend to the Secretary of Energy such modifications of the design considered necessary to ensure adequate protection of public health and safety.

5. Make such recommendations to the Secretary of Energy with respect to DOE defense nuclear facilities, including the assembly, disassembly, and testing of nuclear weapons, operations of such facilities, standards, and research needs, as determined to be necessary to ensure adequate protection of public health and safety.

In support of this mission, the DNFSB has identified the following four interdependent, strategic areas of concentration and has organized its technical staff according to these strategic areas:

AREA 1. **NUCLEAR WEAPON OPERATIONS**: DOE operations that directly support the nuclear stockpile and defense nuclear research.

AREA 2. **NUCLEAR MATERIAL PROCESSING AND STABILIZATION:** The processing, stabilization, and disposition of DOE defense nuclear materials and facilities.

AREA 3. **NUCLEAR FACILITIES DESIGN AND INFRASTRUCTURE:** Reviewing the design and construction of new DOE defense nuclear facilities, and major modifications to existing facilities.

AREA 4. **NUCLEAR SAFETY PROGRAMS AND ANALYSIS:** How DOE regulations, requirements, and guidance affecting public or worker health and safety are developed, implemented, and maintained; and safety programs at defense nuclear facilities are established and implemented.

The FY 2004 performance goals and accomplishments associated with each of these areas of concentration will be discussed further in Chapter 2 of this report.

FUTURE CHALLENGES

The DNFSB is facing a number of significant technical and fiscal challenges that will impact the accomplishment of its independent health and safety oversight mission. With its current allocation of resources, the DNFSB is pressed to keep pace with the significant increase in new defense nuclear facilities in the design and construction phase. DOE has 25 new design and construction projects currently underway or planned for the near future.

Second, DOE's nuclear weapons stockpile stewardship and management operations require particular DNFSB oversight attention due to the hazards associated with the nuclear explosive activities and experiments involving collocated high explosives and nuclear material. In addition to the criticality safety concerns, the DNFSB is especially sensitive to the safety risks due to the potential for explosive dispersal of radioactive materials or inadvertent nuclear detonation.

A third challenge is maintaining a determined, focused, and well-executed human capital program. Because the DNFSB's health and safety recommendations and other advisories to the Secretary of Energy are based on in-depth technical information and detailed safety analyses, the recruitment and retention of scientific and technical staff members with outstanding qualifications continues to be critical to the successful accomplishment of the DNFSB's mission.

Oversight of New DOE Design and Construction Projects

The DNFSB is required by law to review the design and construction of projects to ensure the safety of the public and workers is addressed early in the design process. The DNFSB will continue to expend considerable resources to review the ongoing design effort as well as the construction activities at 25 new DOE defense nuclear facilities. The following table provides an informal rating using three project assessment characteristics for each of these new projects:

1. Significance = overall importance of the facility to the mission of the complex;

2. Complexity = an assessment of the difficulty in successfully implementing the design;

3. Risk = an assessment of programmatic risk and safety risk for the facility.

NEW DOE DESIGN & CONSTRUCTION PROJECTS

	RATING		
	SIGNIFICANCE	COMPLEXITY	RISK
HIGH	19	9	11
MODERATE	6	9	9

The DNFSB plans to concentrate its oversight attention on the projects with high risk, significance, and complexity. One prominent example of a high risk, new facility undergoing both design and construction is the $6 billion Waste Treatment Plant (WTP) in Richland, Washington. The WTP project consists of three major nuclear facilities to pretreat and vitrify high-level waste stored in underground tanks at Hanford. This project has evolved from a facility designed to treat only 10 percent of the tank waste at Hanford to one that in theory, can process all of the high-level waste inventory from the underground tanks by 2028.

WTP is a complex, high risk program that is constantly changing design and construction parameters and will require more than 15 years to complete. This project is critically important for successful cleanup of Hanford. The Secretary of Energy recently informed the Congress that the Department relies heavily on the DNFSB to ensure that safety features are incorporated in the WTP design, based on extensive reviews by the DNFSB. These design and construction reviews are resource intensive and time consuming, but are key in preventing safety flaws in design and construction that could render a newly constructed facility unusable.

Safety of Nuclear Weapon Activities

To maintain this Nation's nuclear deterrent without the design of new weapons and the controlled detonation of the existing weapons, DOE is accelerating its programs to extend the life of weapons in the enduring stockpile, requiring more and increasingly complex operations to disassemble, refurbish, reassemble, and recertify nuclear weapons and components. The dominant accident in the nuclear weapons complex is an inadvertent nuclear detonation at either the Pantex Plant during nuclear explosive operations, or the Nevada Test Site while working on a damaged nuclear weapon or an improvised nuclear device. The DNFSB must provide comprehensive and effective oversight to ensure an accident with the absolutely unacceptable consequence of a nuclear detonation never occurs.

It is anticipated that the current operational tempo in nuclear explosive operations at the Pantex Plant will likely increase due to increased requirements to surveil our aging nuclear weapons stockpile, particularly in the absence of underground testing, and pressure to dismantle our retired nuclear weapons as we draw down our stockpile. In addition, the National Nuclear Security Administration (NNSA) plans to begin nuclear explosive operations for the first time at the Device Assembly Facility (DAF) at the Nevada Test Site (NTS) to support dismantlement of retired weapons. Oversight of this particular activity will require significant staff resources.

In addition, the DNFSB has been urging DOE to develop a capability at NTS to disposition a damaged nuclear weapon or improvised nuclear device. While a significant amount of progress has been made, there is still much work to be done. Additionally, there is always the possibility of a national crisis which would require a return to underground testing at NTS. In fact, there is a Presidential requirement to maintain the capability to do this within 18 months. Finally, the Nation's capability to perform nuclear criticality experiments is being moved from LANL to NTS over the next few years.

To effectively oversee the health and safety issues and maintain the pace of this expanded weapons program, the DNFSB will need to augment its technical staff with subject matter experts and field site representatives, as well as contract for unique specialized technical expertise (e.g., in-depth knowledge of a particular weapon design). In FY 2004, the DNFSB established a site office at the Lawrence Livermore National Laboratory, and assigned additional site representatives to monitor nuclear weapon-related activities at the Pantex Plant (Texas), the Oak Ridge Y-12 National Security Complex (Tennessee), and the Los Alamos National Laboratory (New Mexico).

DOE plans to finalize testing and start-up of new tritium processing facilities at the Savannah River Site in FY 2006. The new Tritium Extraction Facility will involve highly radioactive tritium producing burnable absorber rods that have been irradiated in a commercial reactor. Some of the processes used at the Tritium Extraction Facility will be new and others will involve operations not conducted at the tritium processing facilities for more than a decade. Because the hazards of radioactive tritium gas are different from the hazards at most other DOE defense nuclear facilities, the DNFSB will need to devote substantial, specialized technical expertise to oversee the start-up, testing, and initial operation of these activities to ensure safety.

Human Capital Initiatives

The means for an effective DNFSB oversight program begins with a determined, focused, and well-executed human capital program. This program uses all available tools to attract and retain the technical talent necessary to accomplish the job that Congress requires the DNFSB to do. After years of careful recruiting and selection, the DNFSB's technical staff is composed of approximately 60 scientists and engineers with extensive backgrounds in technical disciplines such as nuclear-chemical processing, conduct of operations, general nuclear safety analysis, conventional and nuclear explosive technology and safety, nuclear weapons safety, storage of nuclear materials and nuclear criticality safety, and waste management. Essentially all of the technical staff have technical masters' degrees, and approximately 28 percent have doctoral degrees.

Because the DNFSB's health and safety recommendations and other advisories to the Secretary of Energy are based on in-depth technical information and detailed safety analyses, the recruitment and retention of scientific and technical staff members with outstanding qualifications continues to be critical to the successful accomplishment of the DNFSB's mission.

As an oversight organization comprised of technical experts, the DNFSB must plan for upcoming staff retirements that will reduce our technical capabilities if action is not taken soon. More than 16 percent of the DNFSB's technical staff and 40 percent of our senior executives are eligible for regular retirement today. In FY 2006, the number of technical staff eligible for retirement rises to 22 percent of our technical workforce.

To address the expected loss of technical staff capability, the DNFSB developed and previously implemented a three-year Professional Development Program (PDP). This recruitment and development program brings entry-level technical talent into professional positions within the DNFSB. Through a technical mentor, individuals are provided a series of individually tailored developmental assignments, formal academic schooling, and a one-year, hands-on field assignment. This is a highly competitive program designed to attract the next generation of scientific and technical talent to federal service.

Unfortunately, the DNFSB was forced to suspend its PDP in FY 2004 due to a serious shortfall in overall funding for the DNFSB, and a decrease in the DNFSB's FTE ceiling to 100 that prevents hiring new staff until an actual vacancy occurs. Clearly, the DNFSB needs to re-institute this succession planning effort to ensure that qualified scientists and engineers are hired and trained to perform this critical oversight mission.

PROGRAM PERFORMANCE OVERVIEW

In establishing the DNFSB, Congress chose to establish an independent external oversight organization composed of technical experts in the field of nuclear health and safety. Therefore, the DNFSB was given specific oversight and advisory powers, as opposed to being an independent regulator of the DOE defense nuclear complex. In view of the DNFSB's enabling legislation and specific mission, the DNFSB must focus its expertise and limited resources on one goal:

> **The DNFSB will assist DOE in improving safety at existing and proposed defense nuclear facilities by identifying health and safety issues affecting the public and the workers, recommending actions to address these issues, and ensuring that corrective actions are completed.**

To achieve this general goal, the DNFSB has identified the following four interdependent, strategic areas of concentration and has developed performance goals and outcome objectives for each:

AREA 1. NUCLEAR WEAPON OPERATIONS

Performance Goal: DOE operations that directly support the nuclear stockpile and defense nuclear research are conducted in a manner that ensures adequate protection of the health and safety of the workers and the public.

Stockpile management is the term used to describe the industrial aspects of maintaining the U.S. nuclear weapons stockpile and complex. DNFSB oversight activities for this strategic area focus on assuring that current and planned operations at the Pantex Plant in Texas, the Y-12 National Security Complex in Tennessee, and tritium operations at the Savannah River Site in South Carolina are accomplished safely according to approved standards.

Also included in this strategic area is the DOE Stockpile Stewardship Program, which refers to activities carried out by DOE to ensure confidence in the safety, security, and reliability of nuclear weapons in the stockpile, in the absence of underground nuclear weapons testing. The DNFSB's oversight of the stockpile stewardship program is centered on assuring the safety of the research, development, manufacturing, and testing activities conducted at the Los Alamos National Laboratory in New Mexico, the Lawrence Livermore National Laboratory in California, the Nevada Test Site, and Sandia National Laboratories in New Mexico and California.

Outcome: DOE will have acknowledged, acted upon, and/or resolved the health and safety issues raised by the DNFSB, and the facilities are operated to approved safety standards, rules, orders, and directives. Follow-up technical evaluations of DOE's nuclear stockpile activities will verify necessary improvements in safety.

AREA 2. NUCLEAR MATERIAL PROCESSING AND STABILIZATION

Performance Goal: The processing, stabilization, and disposition of DOE defense nuclear materials and facilities are performed in a manner that ensures adequate protection of the health and safety of the workers and the public.

With the shutdown of major weapon production activities at defense nuclear facilities in the early 1990s, substantial quantities of plutonium, uranium, transuranic isotopes, and irradiated fuel have remained in storage for extended periods under potentially unsafe and deteriorating conditions. The DNFSB's focus in this strategic area is to aid DOE in identifying these excess materials and in reviewing DOE's plans/programs to stabilize the materials and place them in a safe configuration for storage pending future programmatic use or disposition.

DNFSB oversight in this area will include the stabilization of spent nuclear fuel at the Hanford Site in Washington and the Savannah River Site in South Carolina, the nuclear waste programs conducted at the Savannah River and Hanford sites, as well as the Waste Isolation Pilot Plant (WIPP) in New Mexico and the Idaho National Engineering and Environmental Laboratory. The DNFSB will also provide health and safety oversight of DOE programs to safely deactivate and decommission facilities at the Hanford and Savannah River Sites, the Y-12 National Security Complex in Tennessee, the Rocky Flats Environmental Technology Site in Colorado, and the Fernald and Mound Sites in Ohio, and the Los Alamos and Lawrence Livermore National Laboratories in New Mexico and California.

Outcome: DOE will have acknowledged, acted upon, and/or resolved the health and safety issues raised by the DNFSB. Follow-up technical evaluations of DOE's nuclear materials management and facility disposition activities will verify necessary improvements in safety, as DOE meets its commitments to the DNFSB to stabilize and dispose of hazardous nuclear materials.

AREA 3. NUCLEAR FACILITIES DESIGN AND INFRASTRUCTURE

Performance Goal: New DOE defense nuclear facilities, and major modifications to existing facilities, are designed and constructed in a manner that ensures adequate protection of the health and safety of the workers and the public.

To ensure that safety is addressed early in the process, the DNFSB reviews the design and construction of new DOE defense nuclear facilities. These facilities must be designed and constructed in a manner that will support safe and efficient operations for 20 to 50 years. This requires a robust design process that will ensure appropriate safety controls are identified and properly implemented early in the process. The DNFSB's expectation is that the design and construction phases of defense nuclear facilities will be accomplished under approved nuclear codes and standards, and demonstrate clear and deliberate implementation of Integrated Safety Management (ISM) principles and core functions.

The DNFSB's reviews of the design and construction of major facilities and projects in this strategic area are resource intensive and time consuming, but they result in significant safety improvements. In recent years, there has been an increase in the number of new DOE projects, with 25 projects in the design and construction phase. Examples of these new projects include the Tritium Extraction Facility, currently under construction at the Savannah River Site; the Hanford Waste Treatment Plant, which is in the design and construction phase; the Highly Enriched Uranium Materials Facility, which is in the design phase at the Y-12 Site; and the Pit Disassembly and Conversion Facility, which is in the design stage at the Savannah River Site.

Outcome: DOE will have acknowledged, acted upon, and/or resolved the health and safety issues raised by the DNFSB. Follow-up technical evaluations will verify necessary safety improvements in the design and construction of DOE's new nuclear facilities and major modifications to existing facilities. New nuclear facility designs will meet acceptable safety standards.

AREA 4. NUCLEAR SAFETY PROGRAMS AND ANALYSIS

Performance Goal: DOE regulations, requirements, and guidance are developed, implemented, and maintained; and safety programs at defense nuclear facilities are established and implemented; as necessary to protect adequately the health and safety of the workers and the public.

The DNFSB's oversight effort in this area focuses on issues where a complex-wide perspective on health and safety issues across the DOE complex is required to identify and correct generic health and safety problems. Under the aegis of Integrated Safety Management (ISM),[1] significant resources are applied to areas such as the technical competence of DOE's Federal workforce, the efficiency of DOE's line management and safety oversight, and the development and implementation of ISM systems with particular focus on safety analyses and controls. Key supporting functional areas are also reviewed, such as quality assurance, nuclear criticality safety, and training and qualifications.

The DNFSB's reviews in this strategic area often build on data collected at the field level in the first three areas, integrating and analyzing the results to feed back key information that can be used to direct safety program improvement across multiple management lines. For example, at the DNFSB's urging, DOE issued a quality assurance improvement plan to strengthen the implementation of existing quality requirements for safety-related components and systems. Similarly, the DNFSB continues its efforts to ensure that DOE maintains a vigorous nuclear criticality safety infrastructure to support nuclear operations. The DNFSB has been instrumental in driving recent DOE efforts to verify that vital safety systems have been identified throughout the defense nuclear complex and that their condition is understood and controlled.

Outcome: DOE will have acknowledged, acted upon, and/or resolved the health and safety issues raised by the DNFSB. In addition, follow-up technical evaluations of DOE's safety programs at defense nuclear facilities will verify necessary improvements in safety, and effective implementation of ISM principles.

[1] Integrated Safety Management (ISM) is the means by which the Department of Energy is institutionalizing the process of incorporating into the planning and execution of every major defense nuclear activity those controls necessary to ensure that environment, safety, and health objectives are achieved.

Interdependency of the Four Performance Goals:

The interdependence of these four strategic areas of concentration must be understood to appreciate the efficiency of the DNFSB's operating plan and corresponding organizational alignment. The "lessons learned" from the DNFSB's health and safety oversight activities crosscut into each of these four areas. Health and safety hazards identified in Nuclear Material Processing and Stabilization (Area 2) must be transferred to the Nuclear Weapon Operations (Area 1) to avoid or mitigate new remediation issues before they happen. Likewise, the lessons learned from Nuclear Facilities Design and Infrastructure (Area 3) must be shared with managers responsible for preparing and enforcing health and safety-related guidance, requirements, and regulations in Nuclear Safety Programs and Analysis (Area 4).

For example, in order to oversee safety at the Y-12 National Security Complex, the DNFSB must assess the safety of hazardous activities that support the nuclear weapons stockpile (Area 1). To accomplish its general goal, the DNFSB must also assess processing and stabilization of nuclear materials to support facility deactivation, such as Building 9206 (Area 2), construction of new defense nuclear facilities such as the Highly Enriched Uranium Materials Facility (Area 3), and implementation of important safety programs such as criticality safety (Area 4).

Another example of the interdependence of the four strategic areas of concentration is the safety oversight of the Savannah River Site. At this site, the DNFSB must evaluate not only the safety of nuclear material processing and stabilization activities such as disposing of high level waste (Area 2), but also the safety of nuclear weapon support activities involving tritium operations (Area 1), the construction of new defense nuclear facilities such as the Pit Disassembly and Conversion Facility (Area 3), and nuclear safety programs such as high level waste tank integrity inspections (Area 4).

As discussed in Strategic Area 3 above, DOE is designing and constructing many new defense nuclear facilities that will be used to support the nuclear weapon operations and/or nuclear material processing and stabilization. To ensure that DOE protects the health and safety of the public and the workers, the DNFSB must pay close attention to the design, construction, start-up and operation of these facilities, as well as major modifications to existing facilities, including the selection of governing safety standards and requirements.

Equally important, the DNFSB evaluates the directives, standards, and programs governing DOE's safe performance of its hazardous defense nuclear activities. The DNFSB's first three strategic areas of concentration heavily rely upon the implementation of specific DOE rules and directives. The DNFSB's integrated, comprehensive oversight of the safety of DOE's defense nuclear facilities requires that the DNFSB carefully evaluate these safety programs.

The synergy gained from constant information-sharing among the DNFSB's matrixed staff which supports all four strategic areas of concentration is key to achieving the DNFSB's general goal.

The DNFSB's technical staff has been organized specifically to achieve the agency's performance goals and to execute its Strategic Plan and Annual Performance Plans. Using a matrix form of organization, the DNFSB gains management flexibility and avoids the need to establish layers of middle management that divert limited staff resources from performing health and safety reviews. Four interdependent technical groups, staffed with technical specialists having both the education and work experience commensurate with the designated oversight assignments, have been created, each with direct responsibility for achieving one of the four strategic performance goals described in this plan. Depending on the urgency of the issue, the DNFSB may reassign resources among these groups as necessary.

FINANCIAL PERFORMANCE OVERVIEW

As of September 30, 2004, the DNFSB had sufficient funds to conduct its health and safety oversight mission, and had adequate internal controls to ensure that obligations did not exceed its total budget authority. As with many small agencies with limited resources, the DNFSB has adopted the "economies of scale" philosophy for obtaining needed administrative support services. For financial support, the DNFSB has negotiated interagency agreements with the Bureau of Public Debt and the National Finance Center for personnel/payroll services, and the General Services Administration's (GSA) Heartland Finance Center for accounting services on a fee-for-service basis. The DNFSB also contracted with a private CPA firm, Cotton & Company LLP, to conduct an audit of the DNFSB's financial statements for FY 2004 and prepare the required opinion as to whether the DNFSB's financial statements are presented fairly in accordance with generally accepted accounting principles.

Sources of Funds

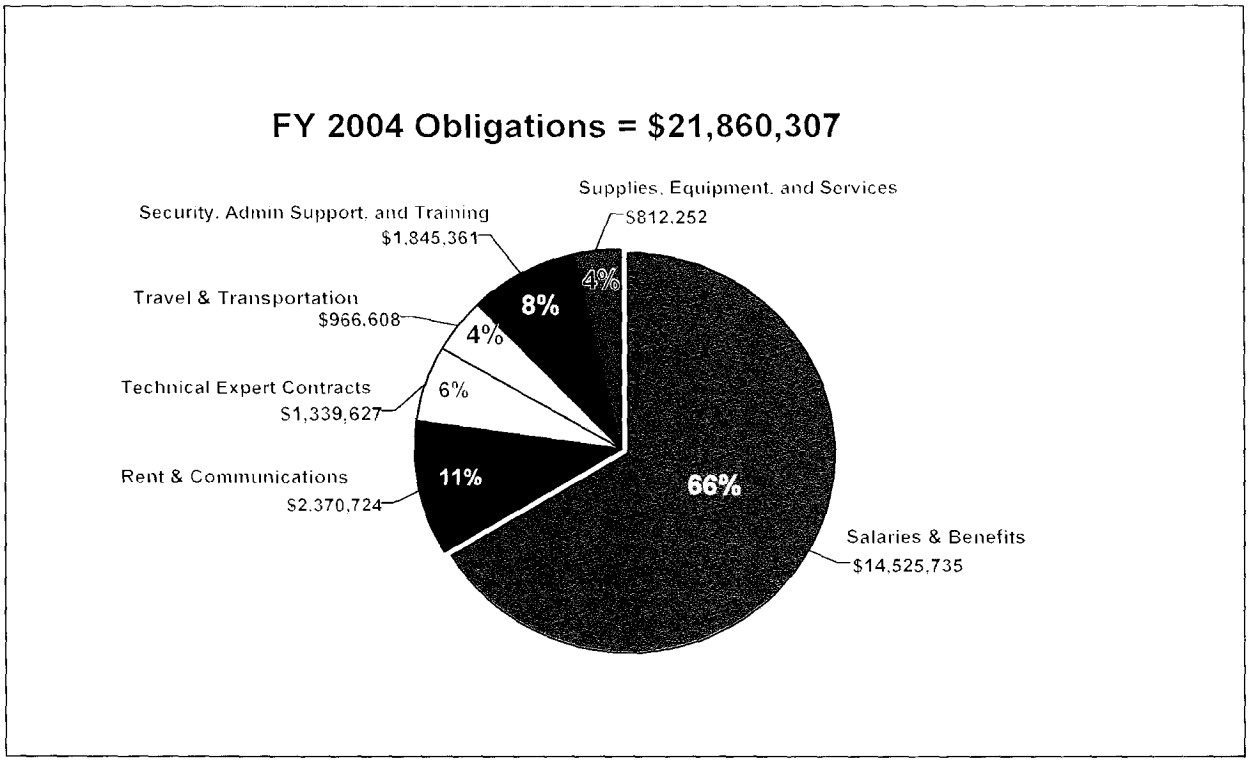
The DNFSB receives an annual appropriation, for Salaries and Expenses, with the funds made available until expended. The sources of funds available for obligation in FY 2003 and FY 2004 are listed as follows:

	FY 2003	FY 2004
New Budget Authority	$18,876,500	$19,443,602
Prior Year Unobligated Balance	2,929,924	2,477,974
Recovery of Prior Year Obligations & Offsetting Collections	628,438	921,071
Total Budgetary Resources	**$22,434,862**	**$22,842,647**

The DNFSB has no reimbursable work for others authority, and is not authorized to collect fees or charges for its oversight services conducted at the Department of Energy's defense nuclear facilities.

Uses of Funds by Function

The DNFSB incurred obligations of $21.9 million in FY 2004, an increase of $1.6 million or 8 percent over obligations for FY 2003. As shown on the chart below, the FY 2004 budget was used primarily to pay the salaries and benefits of our employees, with most of the remaining resources dedicated to the logistical support of the five DNFSB Members and employees as they conducted oversight operations.



FY 2004 Total Obligations by Object Class

Audit Results

FY 2004 is the first year that the DNFSB is required to prepare an audited financial statement under the requirements of the Accountability of Tax Dollars Act of 2002. The DNFSB requested and received a waiver of the audit requirements for FY 2003 due to the unbudgeted expense for an outside auditor contract, and that our interagency financial services providers, GSA and the Bureau of the Public Debt, were not prepared to conduct the Statement of Auditing Standards (SAS 70) audit.

With FY 2004 being the first year that the DNFSB conducted an independent financial audit, Cotton & Company issued a disclaimer of opinion on the Consolidated Statement of Changes in Net Position, the Combined Statement of Budgetary Resources, and the Consolidated Statement of Financing since opening balances for FY 2003 were not audited.

In addition to the opening balances issue discussed above, Cotton & Company was not able to express an opinion on the financial statements as of and for the year ending September 30, 2004 due to questions concerning the DNFSB and GSA financial reporting process that could not be researched and resolved before the completion of the audit.

A full discussion of problems identified as a result of this audit and actions by DNFSB management to address these findings and recommendations can be found in Chapter 3 of this PAR.

SYSTEMS, CONTROLS, AND LEGAL COMPLIANCE

This section provides information on DNFSB's compliance with the:

- Federal Managers' Financial Integrity Act
- Prompt Payment Act
- Debt Collection Improvement Act
- Federal Travel Card Program
- Federal Purchase Card Program
- Federal Information Security Management Act (FISMA)
- Other key legal requirements

Federal Managers' Financial Integrity Act (FMFIA)

The Integrity Act requires that agencies establish controls that provide reasonable assurance that: (i) obligations and costs comply with applicable law: (ii) assets are safeguarded from waste, loss, unauthorized use, or misappropriation; and (iii) revenues and expenditures are properly recorded and accounted for. Based on line managers' knowledge of daily operations and other management reviews, we are confident that the Board has a working system of internal controls that safeguard our assets from waste and misappropriation. However, our independent auditor has pointed out areas where the DNFSB and the GSA Heartland Finance Center need to improve the controls for properly recording and accounting for expenditures in order to produce timely and accurate financial statements. Since this is the DNFSB's first attempt to produce financial statements, neither the GSA accounting staff nor the Board's internal administrative staff were prepared to research and answer our independent auditor's questions in a timely manner. Since receiving the final audit report, many of the findings and questions raised in the audit report have been resolved.

It should be clearly understood that the DNFSB is dependent on the accounting services provided by the GSA financial staff, and as a small agency, has neither the resources nor expertise to support an internal accounting operation. Acting upon the lessons learned as a result of this audit, the DNFSB staff will work with GSA to improve internal controls of our financial operations.

Our independent auditor did note that most of the control weaknesses identified in our information technology operations (IT) are a result of a lack of detailed written policies and procedures covering the daily

IT operations at the DNFSB. The DNFSB is aware of this shortcoming in our IT operations, and is working to develop the necessary analyses and written policies while maintaining its excellent delivery of timely and reliable IT services to the Board's staff and outside customers.

Prompt Payment

Due to its limited resources, the DNFSB pays close attention to ensuring that timely payments are made to its vendors of supplies and services. During FY 2004, the DNFSB paid $123 in interest penalties due to the late payment of one voucher from a support contractor. On this particular transaction, our financial services provider, GSA, did not process the payment voucher in a timely manner due to administrative error on their part. The DNFSB has internal controls procedures in place to ensure that vouchers are tracked for timely processing with the agency, and will continue to encourage GSA to increase its attention to this issue.

Based on a sampling of invoices paid on behalf of the DNFSB by the GSA financial services center, our auditor noted a number of instances where it appears that GSA accounting staff may have entered an incorrect payment due date in their financial system. This type of data entry error could delay the payment of vendor invoices by several days, and could potentially trigger a prompt payment interest charge in some cases. The DNFSB financial staff has shared our auditor's findings with GSA management in order to validate this audit finding and has implemented the appropriate corrective actions.

Debt Collection

The Debt Collection Improvement Act is intended to enhance the ability of the Federal government to service and collect debts. At the close of FY 2004, the DNFSB has outstanding debt owed to it in the amount of $12,403. A schedule of monthly payments to retire this debt was established for this former DNFSB employee, and all scheduled payments have been received on time. Since the DNFSB received all of its funds through direct appropriation, and does not have reimbursable authority, debt collection is not an issue.

Federal Travel Card Program

The DNFSB is a full participant in the Federal Travel Card Program, and has issued travel credit cards to employees whose official duties may require them to travel. The DNFSB's funds control staff routinely monitors each employee's usage of the travel card to ensure that charge activities are restricted to official government travel-related expenses, and that the employee is paying his/her credit card bills on-time.

During FY 2004, employees were reimbursed for authorized travel-related expenses no more than five working days after their completed travel vouchers were submitted for processing. During this same period, no DNFSB employee's travel card account was more than 60 days delinquent, and no inappropriate usage of the travel card was identified during our monthly review of credit card activity.

Federal Purchase Card Program

This DNFSB has made extensive use of the U.S. Government's purchase card program to expedite the purchase of authorized supplies and services both in its headquarters and field operations. During FY 2004, transactions using individual purchase cards totaled $320,300.

The DNFSB established a system of internal controls to ensure that only authorized purchases are made by each card holder. For example, the DNFSB's purchase card procedures were revised and copies distributed to all purchase cardholders during FY 2004. These revised procedures stressed the requirement for completion of the electronic training program necessary to exercise the delegations of procurement authority.

The DNFSB's internal control procedures for the purchase card program feature a review much more stringent than the requirements of the program itself, without sacrificing the overall efficiency and timeliness of this purchasing method. All card purchases are reviewed and approved by the cardholder's supervisor, the purchase card coordinator, and finally, a DNFSB contracting officer gives final approval of invoices. This final step is the true strength of the DNFSB's controls. In an effort to reduce the number of purchase cardholders in accordance with OMB recommendations, the volume of transactions for each purchase cardholder was reviewed and three purchase cards were cancelled. The total number of purchase cards held at headquarters is now eight, a reduction of 25 percent during FY 2004.

Federal Information Security Management Act (FISMA)

The Federal Information Security Management Act (FISMA) requires an annual, independent evaluation of each agency's information technology (IT) security program. To improve the DNFSB's information security posture, the DNFSB executed a memorandum of understanding with the National Institute of Standards and Technology (NIST) in June 2004 to conduct a program review for Information Security Management Assistance (PRISMA). The DNFSB specifically partnered with NIST to obtain recommendations for improvements and share best practices. The PRISMA review provides a balanced view of the DNFSB's IT security program that identifies both strengths and weaknesses. The review also facilitates the exchange of usable solutions among government agencies and between the government and private sectors.

The NIST delivered a final report to the DNFSB on October 6, 2004. The report serves as a blueprint for meeting the requirements of the Federal Information Security Management Act (FISMA), the Computer Security Act of 1987, and OMB Circular A-130. The NIST program review focused on the standards and guidance necessary for building and maintaining a strong information security program.

Government Accountability Office (GAO) Investigations and Reports

Audit followup is an integral part of good management. In accordance with OMB circular A-50, each agency must establish systems to assure the prompt and proper resolution and implementation of audit recommendations. During FY 2004, the GAO did not conduct any reviews, or investigations of DNFSB oversight programs, and there are no open audit recommendations from previous GAO reviews.

Improper Payments

The DNFSB is considered to be at low risk for improper payments since the functional payment areas are limited to traveler reimbursement, commercial vendors for supplies and services, and the payroll EFT payments. The DNFSB does not administer any entitlement, grant, or loan programs. During FY 2004, GSA and the Bureau of Public Debt made total payments of $20,936,931 on behalf of the DNFSB. Neither the GSA accounting staff, the DNFSB's outside auditor, nor the DNFSB finance staff have identified any improper payments during this period.

The last major type of oversight performed by the DNFSB is the identification of new safety issues that were otherwise unknown in the DOE complex. Since, by definition, these safety issues would not have been addressed without the DNFSB's efforts, this may be the area in which the DNFSB has the largest impact on the safety of DOE's highly hazardous operations. However, by their very nature, it is impossible to plan for these emergent safety issues in advance. The effectiveness of this type of safety oversight activity relies exclusively on the expertise of the DNFSB and its staff. The DNFSB's ability to identify previously unknown safety issues is constrained by the DNFSB's limited resources.

The DNFSB uses its Strategic Plan and Annual Performance Plan to ensure that its limited resources remain focused on the most significant safety challenges and the DOE activities that warrant the most external review. All of the DNFSB's safety activities are closely tied to goals and objectives embodied in these plans. This approach gives the DNFSB confidence that its small staff (fewer than 100 FTEs, including five full-time DNFSB Members) and budget (approximately $20 million per year) are dedicated to the highest-risk activities under the DNFSB's jurisdiction. The DNFSB's strategic plan may be viewed in its entirety on the DNFSB's internet website at *www.dnfsb.gov*.

The information in this *Performance and Accountability Report* (PAR) is also provided directly to the Congress in the DNFSB's statutorily required annual report, also available on the DNFSB's website. There are slight differences between the two reports because the annual report covers calendar years rather than fiscal years. The DNFSB's *Fifteenth Annual Report to Congress* will be issued during the first quarter of CY 2005. The DNFSB's annual reports and performance reports are drafted by Federal employees of the DNFSB with only administrative assistance from contractors.

SAFETY GOALS

The DNFSB revised its strategic plan in 2003 to refocus its efforts and better align its resources to meet the challenges of ensuring safety in the defense nuclear complex as the DOE mission evolves during the latter half of this decade. Previous performance reports were established and executed to achieve the objectives of the earlier version of the DNFSB's strategic plan. The changes to the plan are evolutionary in nature and primarily result in increased DNFSB attention on ensuring safety in the area of nuclear facility design and infrastructure issues while maintaining vigilance in the areas of nuclear weapons and nuclear materials. The performance goals that result from the current strategic plan are summarized below:

SAFETY OVERSIGHT GOAL

> **The DNFSB will assist DOE in improving safety at existing and proposed defense nuclear facilities by identifying health and safety issues affecting the public and the workers, recommending actions to address these issues, and ensuring that corrective actions are completed.**

To achieve this general goal, the DNFSB has identified the following four interdependent, strategic areas of concentration and has developed performance goals and outcome objectives for each:

AREA 1. NUCLEAR WEAPON OPERATIONS:

Performance Goal: DOE operations that directly support the nuclear stockpile and defense nuclear research are conducted in a manner that ensures adequate protection of the health and safety of the workers and the public.

AREA 2. NUCLEAR MATERIAL PROCESSING AND STABILIZATION:

Performance Goal: The processing, stabilization, and disposition of DOE defense nuclear materials and facilities are performed in a manner that ensures adequate protection of the health and safety of the workers and the public.

AREA 3. NUCLEAR FACILITIES DESIGN AND INFRASTRUCTURE:

Performance Goal: New DOE defense nuclear facilities, and major modifications to existing facilities, are designed and constructed in a manner that ensures adequate protection of the health and safety of the workers and the public.

AREA 4. NUCLEAR SAFETY PROGRAMS AND ANALYSIS:

Performance Goal: DOE regulations, requirements, and guidance are developed, implemented, and maintained; and safety programs at defense nuclear facilities are established and implemented; as necessary to protect adequately the health and safety of the workers and the public.

ANNUAL PERFORMANCE OBJECTIVES

The DNFSB's *Annual Performance Plan for FY 2004* identifies annual performance objectives that consist of reviews to be conducted in support of the DNFSB's strategic plan, plus the identification of candidate areas for these reviews. An outcome measure for each objective is described as part of the discussion of each annual performance goal. Qualitative assessments of the outcome associated with each annual performance goal are provided in this chapter of the DNFSB's PAR.

The DNFSB measures progress toward achieving the positive outcomes embedded in each annual performance goal in three stages, by evaluating:

- The DOE's acknowledgment that a safety enhancement is needed after the DNFSB communicates the results of its technical reviews;
- The DOE's subsequent development of appropriate corrective actions to resolve the DNFSB-identified safety issue; and
- The DOE's implementation of the necessary corrective actions, leading to the successful resolution of the safety issue and resulting in improved protection of the public, the workers, and the environment.

The basis of measurement for the qualitative assessment includes formal, publicly-available, correspondence of DOE and its defense nuclear contractors, DNFSB correspondence, staff reports, DOE and contractor public testimony, and other sources. Past reporting (see the DNFSB's annual reports) of DNFSB-identified issues and associated DOE responses demonstrates that the DNFSB has had a clear and positive impact on the safety of DOE defense nuclear activities.

Evaluation of the *Fiscal Year 2005 Performance Plan*

No changes to the *FY 2005 Performance Plan* have been identified based on a review of actual results achieved in FY 2004.

Assessment of the Reliability and Completeness of Performance Data

The sources used by the DNFSB to measure its outcome are robust, varied, and independent. Documentation of accomplishments include the DNFSB's Annual Reports to the Congress, correspondence to and from the Department of Energy, DNFSB technical reports, and public meeting records. These documents are available for public review on the DNFSB's internet web site, www.dnfsb.gov. As such, the DNFSB believes that the performance data used in this report are reliable and complete.

The DNFSB did not conduct an independent program evaluation in FY 2004.

Comparison of Fiscal Year 2004 Actual Performance with Planned Performance

The following pages provide detailed information comparing the DNFSB's actual performance driving safety improvements at DOE to its plans for fiscal year 2004.

PERFORMANCE GOAL 1: NUCLEAR WEAPON OPERATIONS

DOE operations that directly support the nuclear stockpile and defense nuclear research are conducted in a manner that ensures adequate protection of health and safety of the workers and the public.

OUTCOME: DOE will have acknowledged, acted upon, and/or resolved the health and safety issues raised by the DNFSB. Follow-up technical evaluation of DOE's nuclear stockpile activities will verify necessary improvements in safety.

FY 2004 Performance Objectives:

The DNFSB and its staff will verify the safety of DOE's defense nuclear facilities and activities relating to the maintenance, storage, and dismantlement of the nuclear weapon stockpile, quality assurance of the stockpile, as well as its associated research and development, and the capability to test nuclear weapons and disposition damaged or improvised nuclear devices (such as a terrorist device).

The DNFSB and its staff will conduct assessments of DOE's efforts to develop and implement safety management systems for stockpile management activities. The DNFSB's evaluations will be split between DOE efforts to develop safety systems (e.g., system and process designs, safety bases, control schemes, and administrative programs) and DOE efforts to implement aspects of safety management systems. These reviews will focus on activities at the Pantex Plant, Y–12 National Security Complex, SRS tritium facilities, Los Alamos National Laboratory (LANL), Lawrence Livermore National Laboratory (LLNL), and Sandia National Laboratories (SNL), as well as the Nevada Test Site (NTS).

Representative areas for DNFSB and staff review include:

- Development and implementation of site-wide and facility-specific safety analyses and controls for nuclear facilities and activities (e.g., safety analysis reports developed in response to 10 CFR 830).
- Annual updates of documented safety analyses (e.g., safety analysis reports developed in response to 10 CFR 830).
- Weapon-specific safety analyses and controls identification and implementation for nuclear weapon activities (the W88, W78, B61, W87, and the B83).
- Conduct of nuclear explosive operations at Pantex (e.g., weapon programs, special purpose facilities and onsite transportation).
- Crosscutting functional areas at the Pantex Plant, Y-12 National Security Complex, or SRS tritium facilities (nuclear criticality safety, fire protection, nuclear explosive safety).
- Special studies of unique or significant hazards at DOE nuclear facilities (e.g., classified projects, process technology alternatives such as the saltless direct oxide reduction (SDOR) and microwave casting).
- Ongoing start-up of enriched uranium operations, hydrogen fluoride systems, and other similar processing activities at the Y-12 National Security Complex.

- Work-planning process (e.g., activity-specific hazard analysis, controls identification, and implementation of safety controls).
- Plutonium pit manufacturing and certification at LANL.
- Preparations to dispose of damaged nuclear weapons or improvised nuclear devices at NTS.
- DOE/contractor operational readiness reviews or other readiness determinations.
- Age-related changes in nuclear weapons components for weapon systems in the enduring stockpile.
- Restart of the Sandia Pulsed Reactor Facility at SNL.
- Compliance with the review process for facility and procedure changes that could impact nuclear safety at the National Laboratories (LANL, LLNL, SNL).

While performing its reviews, the staff will assess the effectiveness of ISM implementation and the safety controls identified for ongoing operations as well as any new weapon system dismantlement projects at the Pantex Plant or Y-12 National Security Complex that start in FY 2004.

FY 2004 Measured Performance:

Support of the Defense Nuclear Complex. As a result of concerns over the continued erosion of technical competence and a need to reemphasize the priority of work that directly supports nuclear safety, the DNFSB issued Recommendation 2002-2, *Weapons Laboratory Support of the Defense Nuclear Complex*. In FY-04, DOE established at each national laboratory a single point of contact for each weapon system; DOE established at each site office a requirement to track and ensure closure of nuclear safety support requirements for weapon laboratories. These changes have enhanced the timely resolution of safety concerns in the nuclear weapon complex.

Safe Storage of "Pits." In response to the DNFSB's Recommendation 99-1, *Safe Storage of Fissionable Material called "Pits,"* DOE continued to repackage pits into a robust container suitable for interim storage in FY 2004. DOE has repackaged its 10,000th pit. The associated container surveillance program has been rejuvenated and the entire surveillance backlog was worked off during FY 2004.

Improvements in Safety Bases at Pantex. The Implementation Plan for DNFSB Recommendation 98-2 includes a commitment to improve the safety bases at the Pantex Plant. In FY 2004, Pantex completed and approved documented safety analysis for facility and site-wide operations. Pantex has begun implementing a number of new and enhanced controls to improve the safety of nuclear explosive operations.

Readiness to Dispose of a Damaged Nuclear Weapon. The DNFSB has consistently highlighted to DOE the need to develop the programs and infrastructure at NTS necessary to safely dispose of a damaged nuclear weapon or improvised nuclear device. In FY2004, DOE made substantial organizational and procedural improvements, and provided training, and developed a safety basis for G-tunnel. As a result, DOE has made substantial physical and procedural improvements and provided training to be prepared to safely dispose of a damaged nuclear weapon should the need arise.

Lightning Protection at LANL. The DNFSB noted that the safety-class lightning protection system at LANL's Weapons Engineering and Tritium Facility (WETF) did not appear to provide adequate lightning protection for the facility. Subsequently, DOE has directed LANL to re-evaluate all hazard and accident analysis scenarios at WETF including lightning. In addition, LANL is required to upgrade fire barriers and package tritium in approved containers as added lightning protection.

Deficiencies in Safety Basis of the Plutonium Facility at LLNL. The DNFSB identified deficiencies in the safety basis for the plutonium facility, at LLNL. In particular, the DNFSB expressed concern regarding the downgrading of several safety-class systems as part of LLNL's new approach to hazard confinement during an accident. LLNL based this approach on an evaluation of how much radioactive material would escape the facility during an accident if there was no active ventilation. The DNFSB pointed out the non-conservative nature of this calculation. In response, NNSA commissioned an independent calculation of the leak path factor. The calculation confirmed the DNFSB's concerns and NNSA directed LLNL to maintain the confinement ventilation system as a safety-class system.

Subcritical Experiments. The DNFSB reviewed DOE's assessments and readiness for subcritical experiments, identifying inadequate nuclear safety management programs; inadequate mechanisms for verification of readiness of subcritical experiments and test readiness (should nuclear weapons testing be resumed); and inadequate commitment to improve the readiness review process for subcritical experiments and nuclear weapons testing. In FY 2004, NNSA's Nevada Site Office improved the safety basis documents, developed a USQ process, improved the readiness review process, and committed to improve the implementation of controls and the conduct of readiness reviews. As a result, subcritical experiments have a documented safety analysis and there is some verification of readiness.

Lightning Protection at NTS. In 2003, the DNFSB noted that lightning protection at NTS did not appear to provide adequate protection for the nuclear operations and personnel. In response, NTS initiated compensatory measures and a study of the lightning protection needs at NTS. In 2004, lightning protection controls were included in the safety basis of several nuclear facilities. As a result, NTS acknowledged the need to make safety improvements, implemented lightning protection controls, and continues to study lightning protection for NTS.

Hoisting and Rigging at NTS. The DNFSB noted deficiencies in hoisting and rigging, maintenance, and practices for nuclear explosive operations at NTS. DOE has reclassified the critical safety equipment (at G-tunnel) used for the handling of damaged nuclear weapons and improvised nuclear devices as safety-class, redesigned controls for handling unvented drums of transuranic waste, and revitalized the maintenance program for hoisting and lifting equipment. As a result, the safety of nuclear explosive operations at NTS has improved markedly.

Critical Experiments Facility at LANL. The DNFSB raised concerns that the unmitigated consequences predicted for the worst nuclear accidents at TA-18 are significant, but NNSA and LANL are relying on the compliance of operators with a set of administrative controls and interim compensatory measures to prevent such accidents. LANL suspended operations at TA-18 after reviewing information provided by the DNFSB and after a LANL review of a safety requirement violation at TA-18 identified weaknesses that reinforced concerns raised by the DNFSB.

Improvements in Quality Assurance Related to the Tooling Program at Pantex. In a June 18, 2004 letter, the DNFSB expressed concern that there continues to be serious weaknesses in the program to design and fabricate tools for nuclear explosive operations at Pantex. Additionally, the DNFSB noted that an effective quality assurance program is essential to the safe design, fabrication, procurement, inspection, and maintenance of special tooling. The DNFSB has requested that NNSA conduct a comprehensive review of quality assurance as it affects the tooling program at the Pantex Plant. NNSA is developing plans to conduct a comprehensive, independent review of quality assurance at the Pantex Plant.

W78 Operations at Pantex. The DNFSB has been urging DOE to improve the safety of weapons-related work at the Pantex Plant since it issued Recommendation 98-2, *Safety Management at the Pantex Plant*. Principle among the DNFSB's recommendations was that DOE simplify and expedite its process for re-engineering nuclear explosive processes at Pantex such that the attendant safety improvements could be put in place sooner. In FY 2004, DOE completed the start-up of the Seamless Safety for the 21st Century (SS-21) W78 Disassembly & Inspection Program. The W78 Disassembly & Inspection program is now significantly safer and more efficient than it had been previously.

Safety of Dismantlement Operations. In a January 20, 2004 letter, the DNFSB identified a number of deficiencies in various processes at the Pantex Plant that led to the attempted dismantlement of a damaged unit in a manner that was not intended, that was not adequately reviewed, and may not have incorporated adequate safety measures. As a result of this incident, Pantex has made improvements in the training of production technicians, in the conduct of unreviewed safety question evaluations, in the performance of nuclear explosive safety evaluations, and in the requirements for involvement of process engineers in certain types of operations.

Y-12 Building 9212 B-1 Wing Fire Protection. The DNFSB identified concerns to NNSA Headquarters regarding the adequacy of fire protection in the B-1 wing of Building 9212 at Y-12. Following a performance-based review, YSO recommended upgrades that include installation of sprinklers on the first floor, a new system shutdown interlock and relocation of certain equipment, and the installation of fire-protective coatings on portions of primary extraction column supports, as well as changes (e.g., new catch basin) to divert primary and secondary extraction combustible liquids to the first floor. Design and planning efforts for the modifications/upgrades have been started by BWXT. The full project is planned (and is to be funded) to be completed by late FY 2005. When completed, it will improve the degree of fire protection in the facility to a level appropriate for the remaining life of the facility.

Y-12 Oxide Conversion Facility. The DNFSB identified concerns in a December 2003 letter regarding the startup of the Oxide Conversion Facility (formerly referred to as the Hydrogen-Fluoride Facility). These concerns included missing weld radiographs, lack of proper designation of certain safety equipment, a credible criticality scenario not addressed, and worker safety concerns. NNSA re-radiographed significant welds, upgraded the functional classification of safety system equipment, added seismic reinforcement to address the criticality concern and addressed the worker safety concerns.

Y-12 Conduct of Operations. The DNFSB raised concerns over the formality of operations at Y-12 and the adequacy with which management oversight was exercised. An overall improvement initiative was started by Y-12 that includes a management observation program to provide increased and documented on-the-floor observations of nuclear operations. Y-12 also instituted a "Conduct of Operations Representatives" program to

provide ongoing, independent oversight and mentoring during nuclear operations. All nine of these representatives have now been deployed.

Y-12 Independent Validation of Safety Basis Controls. The DNFSB inquired on the lack of a Y-12 process for independent validation of implementation of new or revised safety basis controls. Y-12 has instituted independent validation protocols for new/revised safety basis controls. Initial implementation validation reviews in certain Y-12 nuclear facilities showed the need for several enhancements to line management implementation efforts and personnel training. Corrective actions are ongoing.

Y-12 Activity Level Work Planning for Infrequent, Potentially Hazardous Operations. The DNFSB identified planning weaknesses that led to inadequate definition of safety controls for infrequent, potentially hazardous operations. NNSA prompted a contractor assessment resulting in higher levels of review and approval for such evolutions. A successful trial application is being expanded for use by all major nuclear facilities at Y-12.

Y-12 Conduct of Engineering Improvements. After operations failures related to engineering changes at Y-12, the DNFSB raised concerns regarding the adequacy of engineering analysis used to support the changes. Y-12 evaluated its engineering processes and took steps to strengthen requirements on proper design input and verification for engineering changes and to conduct improved training for Y-12 engineering personnel on these issues.

PERFORMANCE GOAL 2: NUCLEAR MATERIAL PROCESSING AND STABILIZATION

The processing, stabilization, and disposition of DOE defense nuclear materials are performed in a manner that ensures adequate protection of health and safety of the workers and the public.

OUTCOME: DOE will have acknowledged, acted upon, and/or resolved the health and safety issues raised by the DNFSB. Follow-up technical evaluation of DOE's nuclear materials management and facility disposition activities will verify necessary improvements in safety, as DOE meets its commitments to the DNFSB to stabilize and dispose of hazardous nuclear materials.

FY 2004 Performance Objectives:

The DNFSB and its staff will conduct assessments of DOE's efforts to characterize, stabilize, process, and safely store plutonium, uranium, and other actinides, residues, spent fuel, and wastes from the nuclear weapons program, to ensure that these efforts are performed safely and that the risks posed by these materials are addressed in a timely manner. These reviews will be conducted using the principles of ISM and will include assessments of the adequacy of current storage conditions, evaluations of proposed treatment and disposal technologies, evaluations of the design of new facilities and process lines, assessments of facility readiness to safely begin new operations (including implementation of 10 CFR 830, *Nuclear Safety Management*), the safety of ongoing operations, and the suitability of long-term storage and disposal facilities. Representative areas for review include:

- Stabilization, packaging, and storage of plutonium metal and oxide at the Savannah River Site (SRS) and Los Alamos National Laboratory (LANL) (Recommendation 94-1/2000-1), including completion of a study of the adequacy of plutonium storage at SRS as required by Public Law 107-314, Section 3183, *Study of Facilities for Storage of Plutonium Materials at Savannah River Site*, and followup on the study's findings.
- Stabilization and disposal of plutonium-bearing residues at LANL (Recommendation 94-1/2000-1).
- Resolution of safety issues and startup of the plutonium-238 scrap recovery line at LANL.
- Design of modifications to existing SRS facilities to increase long-term plutonium storage capacity and provide long-term restabilization/repackaging capability.
- Design of modifications to existing SRS facilities to support potential plutonium disposition activities.
- Monitoring and surveillance activities in support of long-term storage of plutonium.
- Preparations for neptunium solution stabilization at the SRS (Recommendation 94-1/2000-1) and preparations to store the stabilized material at the Y-12 National Security Complex (Y-12).
- Characterization, stabilization, and packaging of uranium-233 (^{233}U) at Y-12 (Recommendation 97-1).
- Design of treatment facilities for high-level waste liquids and salts at the SRS, and system improvements to ensure safe management of the SRS high-level waste (Recommendation 2001-1).
- Testing and operation of high-level waste retrieval and transfer systems at the Hanford Site.
- High-level waste storage tank integrity at SRS and the Hanford Site.

- Startup and initial operations of the Melton Valley transuranic/alpha waste treatment facility at Oak Ridge National Laboratory (ORNL).
- Safety of spent nuclear fuel and sludge retrieval, treatment, and storage at the Hanford Site (Recommendation 94-1/2000-1).
- Preparations for remote-handled transuranic waste operations at the Waste Isolation Pilot Plant (WIPP), and safety of full-throughput contact-handled waste disposal at WIPP.
- Design and construction of a dry storage facility for cesium and strontium capsules at the Hanford Site.
- Safety of contact-handled transuranic waste retrieval at the Hanford Site.
- Startup and initial operation of the Advanced Mixed Waste Treatment Facility at Idaho National Engineering and Environmental Laboratory (INEEL).
- Design of High-Activity Treatment Facility for transuranic waste at the Savannah River Site.
- Complex-wide legacy nuclear material issues, including evaluation of materials not addressed by Recommendations 94-1 and 2000-1 and utilization of stabilization capabilities.
- Design of ORNL's system for processing ^{233}U (i.e., ^{229}Th extraction) for potential medical applications.
- Decommissioning activities in Building 371 at Rocky Flats Environmental Technology Site (RFETS).
- Demolition of Building 776 at RFETS.
- SRS deactivation activities, including F-Canyon and M-Area facilities.
- Hanford Site decommissioning activities (e.g., planning at the Plutonium Finishing Plant).
- Decommissioning at the Miamisburg Closure Project.
- Decommissioning at the Fernald Closure Project, including the design and startup of Silos Project facilities.
- Deactivation and decommissioning of the Heavy Element Facility (Building 251) at Lawrence Livermore National Laboratory.

FY 2004 Measured Performance:

Nuclear Material Stabilization and Storage at LANL. As part of the implementation of the DNFSB's Recommendations 94-1 and 2000-1, the DNFSB has continued to evaluate NNSA's plans for repackaging high-risk materials at LANL into robust containers, and to urge NNSA to pursue alternative approaches that could accelerate this work. As a result, LANL and NNSA have developed a comprehensive nuclear materials packaging and storage plan that will result in a substantial reduction in risk by accelerating the schedule for stabilization, packaging, and improved storage of nuclear materials.

Inactive Actinide Materials. The DNFSB evaluated NNSA plans for managing non-programmatic actinide materials stored at LANL, LLNL, SNL, the Pantex Plant, and Y-12. The DNFSB found that NNSA has begun to define and execute adequately its strategy to characterize materials for storage or disposition, to identify which materials fall under this effort, and to analyze and upgrade, where appropriate, material packaging and storage facility conditions. The DNFSB continues to evaluate the approaches taken by each NNSA site, as well as NNSA's programmatic direction.

Surveillance and Monitoring Program for Plutonium Storage. DOE-STD-3013, *Stabilization, Packaging, and Storage of Plutonium-Bearing Materials*, which establishes requirements governing the long-term storage of plutonium metal and oxides, requires a surveillance and monitoring program to verify safe storage parameters. The Surveillance and Monitoring Program managed by the DOE Savannah River Operations Office was

established for this purpose, but despite assurances provided last year, DOE again under funded the LANL portion of this effort, thereby jeopardizing verification of safe storage parameters as required by the standard. At the urging of the DNFSB, the Assistant Secretary for Environmental Management restored the funding for this program for FY 2004. The DNFSB also reviewed the scientific and statistical methodology for surveillance of plutonium in storage and provided input that corrected overly optimistic assumptions regarding the validity of extrapolations.

Plutonium-238 Repackaging at Oak Ridge National Laboratory. The DNFSB evaluated DOE's plan for repackaging nine items containing approximately 700 grams of plutonium-238 into special-form capsules for safer storage. Based on the DNFSB's findings, DOE made several changes to improve the safety of the repackaging operations for three items that had suspect seals on the inner container. Changes included requiring respiratory protection for all glovebox steps and conducting the entire operation in the ventilated glovebox room.

Neptunium Solution Stabilization at Savannah River Site. The DNFSB reviewed the authorization basis and startup activities for stabilization of neptunium solutions using the HB-Line Facility at the Savannah River Site. The neptunium flowsheet is very similar to previous plutonium operations, and no significant safety-related upgrades were necessary. Issues identified during the readiness assessment were resolved, and neptunium operations successfully began in early August 2004. This is the last major stabilization activity to be commenced at the Savannah River Site under Recommendations 94-1, *Improved Schedule for Remediation in the Defense Nuclear Facilities Complex*, and 2000-1, *Prioritization for Stabilizing Nuclear Materials*.

Uranium-233 Disposition at Oak Ridge National Laboratory. The DNFSB began its review of the design of the Uranium-233 Disposition and Medical Isotope Production Project at Oak Ridge National Laboratory. This project includes extraction of thorium-229 for medical use and down-blending of the remaining material for packaging and disposition. The DNFSB identified the potential for ion exchange resin safety issues similar to those previously identified by the DNFSB at other defense nuclear facilities. The design contractor is using this information in developing resin safety controls that will be included as a part of the project design.

Hanford Tank Farms Fill Height. The DNFSB questioned the safety of DOE's plan to fill certain high-level waste tanks beyond the height which was tested for leaks during construction. In response to these questions, DOE limited the proposal to only those tanks which had been leak tested to the proposed fill height.

Safety Basis for Hanford Tank Farms. The DNFSB identified that the revised Technical Safety Requirements (TSR) for flammable gas and waste transfers had eliminated key safety controls and that the site's independent validation of the implementation of the Documented Safety Analysis was inadequate. Continued questions by the DNFSB led to the further discovery that the contractor had inadvertently put a tank at risk of retaining and releasing significant quantities of flammable gas. As a result, DOE rewrote the TSRs to reinstate controls such as Process Control Plans, convened a second independent review to ensure all safety controls had been implemented, and increased the frequency of key tank waste measurements to better ensure that the safety of current waste conditions was understood.

Salt Waste Processing Facility at SRS. The DNFSB evaluated the safety risks associated with delays in the design and construction of the Salt Waste Processing Facility and urged DOE not to eliminate funding for this important work. DOE has since restored funding for this project and is currently pursuing a program plan that

will accelerate waste stabilization and risk reduction. The DNFSB reviewed the Critical Decision (CD)-1 Facility design documentation and identified weaknesses in the performance categorization and potential seismic interactions of various portions of the facility. DOE plans to upgrade certain structural components to address the seismic interaction concerns and to perform further analysis of the facility performance categorization.

Mercury Hazards at the SRS High-Level Waste System. In 2002, the site identified the potential for workers to be exposed to mercury vapors and compounds in the high level waste tank farms. Since the initial discovery, the DNFSB has had held discussions with DOE and the contractor regarding actions to protect site workers and verified the adequacy of the engineered and administrative controls implemented to protect workers from mercury exposure.

Hanford High-Level Waste Tank Integrity. The DNFSB reviewed the tank inspection program at Hanford and proposals to relax requirements for corrosion inhibitors in the tank waste. The DNFSB provided input during meetings of a Corrosion Expert Panel held at Hanford to evaluate the proposed changes. The panel recommended maintaining the existing corrosion inhibitor controls until a solid technical basis can be developed.

Worker Safety at Hanford High-Level Waste Tank Farms. The DNFSB reviewed a series of occurrences, incidents, near misses, and other operational events indicating serious weaknesses in work planning, conduct of operations, and responses to abnormal events or unexpected conditions at the Hanford tank farms. The DNFSB concluded that these problems were the result of deficiencies in the ISM system for work in the tank farms, particularly in the areas of work planning, conduct of operations, and feedback and improvement programs at the activity level. The DNFSB issued a letter to DOE on September 8, 2004, requesting that DOE provide a report on the weaknesses in ISM at the tank farms and associated corrective actions to improve worker safety.

Hanford Spent Nuclear Fuel Project. The DNFSB's review of ongoing spent nuclear fuel project operations at Hanford identified that changing conditions were not being appropriately reviewed by the contractor for safety implications. Reevaluation of these activities led to multiple positive unreviewed safety questions and the implementation of new controls to provide adequate safety for fuel removal operations.

Hanford Sludge Retrieval and Disposition Project. The DNFSB continued to provide close oversight of the contractor's efforts to start the retrieval of sludge from the K-East Basin at Hanford. The DNFSB urged DOE to require a formal Operational Readiness Review (ORR) for sludge retrieval and to identify new milestones for completing sludge retrieval. DOE and its contractor both completed ORRs that were rigorous and the contractor began limited sludge retrieval. Additionally, DOE committed to new milestones for sludge retrieval and treatment.

Authorization Basis for Hanford Transuranic Waste Facility. After the DNFSB questioned the Department of Energy's compliance with 10 CFR 830, *Nuclear Safety Management*, DOE acknowledged that the proposed Contact-Handled Transuranic Mixed Waste Treatment, Packaging, and Storage Facility at Hanford constituted a new facility and directed the contractor to prepare a Preliminary Documented Safety Analysis (PDSA). Preparation of a PDSA is important because it will require that DOE review the safety control strategy before construction of the facility begins, avoiding the potential to face a future decision between costly rework and compromised safety controls.

Idaho Advanced Mixed-Waste Treatment Project. The DNFSB participated in an in-depth review of the confinement ventilation system for the Advanced Mixed Waste Treatment Project at the Idaho National Engineering and Environmental Laboratory. In response to the findings of this review, DOE and its contractor committed to make improvements to the surveillance and maintenance requirements for this vital safety system.

Melton Valley Transuranic/Alpha Low-Level Waste Treatment Facility. Prior to startup of this new facility, the DNFSB pointed out deficiencies in the conduct of operations for radiological work, including the lack of use or reference to the procedure, lack of direct supervision, and active involvement of the radiological control technician in the work in addition to his radiological survey and oversight tasks. In response, the contractor upgraded the safety of non-routine radiological work by requiring proper use of procedures ("in hand" use and, for certain procedures, deviations allowed only with supervisory approval), direct supervisory oversight, and definition of limits of assistance allowed by radiological control technicians.

Safety Basis for Mobile Transuranic Waste Characterization Units. The DNFSB reviewed the DOE-authored Basis for Interim Operation for the operation of mobile transuranic waste characterization units. The DNFSB discovered inadequacies concerning quantities of material at risk, analysis of deflagrations, and in the controls specified in the Technical Safety Requirements (TSR). Following several discussions and a DNFSB letter, DOE agreed to add several new controls including a formal container inspection program and lid restraints for unvented drums, and will require an (ORR) for new deployments to ensure sites receiving the units are ready to operate them safely.

Retrieval of Transuranic Waste Drums at Hanford. The DNFSB reviewed DOE plans to retrieve transuranic waste drums from soil-covered trenches and noted a lack of adequate controls to protect the workers. In response to a letter from the DNFSB, DOE and its contractor implemented more robust controls for handling unvented drums and began planning for the safe retrieval and handling of high-source term drums containing plutonium-238.

Rocky Flats Environmental Technology Site Building 371 Fire. The DNFSB completed its evaluation of the significant fire that occurred on May 6, 2003, during decommissioning of a glovebox. In a letter of December 2, 2003, the DNFSB identified broad weaknesses in the planning and execution of decommissioning work at RFETS, as well as the site's failure to properly investigate the fire or address the problems which led to the fire. In response, DOE and the contractor conducted extensive reviews and implemented corrective actions such as restricting the use of generic work packages to only simple tasks, instituting more comprehensive review of work packages, improving chemical decontamination and combustible control procedures with associated improvements in conduct of operations, retraining workers on the proper response to fires, and improving daily pre-evolution briefings to better communicate hazards and controls to the workers. Lessons learned have been shared with other DOE sites performing decommissioning work.

Fernald Silo Waste Disposition Project. The DNFSB reviewed the safety analysis for the Silo 3 waste disposition project and raised questions regrading the proper classification of the project, the new form of safety documentation (a nuclear health and safety plan), and various assumptions used in the safety analysis. The contractor subsequently made changes in the safety documentation to improve worker safety. The DNFSB also provided comments on ways to improve the readiness review plans for the startup of the Silo 3 project that were accepted by the contractor and DOE. The DNFSB also evaluated the design adequacy, safety basis, controls, and

readiness preparations for retrieval of the wastes from Silos 1 and 2 for interim storage in robust, aboveground tanks. The DNFSB was satisfied with the preparations for this activity, which began safely in September 2004.

Decommissioning at SRS. The DNFSB evaluated the safety of decommissioning activities at SRS and expressed concern to DOE regarding several potentially serious events, including a release of tritium from contaminated piping, exposure of workers to an unshielded cesium-137 source, falling pipes and duct-work, cutting into active electric lines, a grass fire, and several other events. Although the contractor implemented corrective actions after each event, the DNFSB is evaluating the broader issues regarding the adequacy of training, procedures, and supervision for decommissioning work at SRS.

Sodium Fluoride Traps at ORNL. In a September 2002 DNFSB letter regarding storage of sodium fluoride traps containing uranium-233 hexafluoride in Building 3019, the DNFSB noted the safety issues due to increasing pressure in the traps from radiolytic gas production. ORNL now has completed the depressurization of all sodium fluoride traps susceptible to high pressures.

Pit Shipping Containers for the Pit Disassembly and Conversion Facility. The DNFSB evaluated the worker safety implications of repackaging pits for shipment from the Pantex Plant to the proposed Pit Disassembly and Conversion Facility at the Savannah River Site. The DNFSB concluded that the shipping container design preferred by NNSA would require excessive handling of the pits compared to an alternative design that would simply overpack the innermost container (the sealed insert) used in the existing pit storage packages. As a result, NNSA decided to use the alternative design for the new shipping container, which will reduce worker radiological exposures as well as reducing the likelihood of pit damage during repackaging.

FY 2004 Measured Performance:

Plutonium Storage at SRS. In Public Law 107-314, Section 3183, *Study of Facilities for Storage of Plutonium and Plutonium Materials at Savannah River Site*, Congress tasked the DNFSB to conduct a study of the adequacy of K-Area Materials Storage Facility (KAMS) and related support facilities such as Building 235-F, at the Savannah River Site in South Carolina. In FY 2004, the DNFSB issued its initial report as well as a follow up report to Congress. The DNFSB proposed nine actions it considered necessary to enhance safety, reliability, and functionality of the plutonium storage facilities at SRS. DOE has agreed with the proposals and is currently evaluating implementation of appropriate actions during the next year.

Hanford Waste Treatment Plant Design and Construction. The DNFSB has continued its extensive review of the design and construction of important to safety structures, systems and components in the Waste Treatment Plant (WTP) facilities. Numerous deficiencies and concerns have been identified during these reviews, for example:

- The contractor had planned to eliminate much of the fire-resistive coatings on the structural steel used in the facilities. Eliminating the coatings is inconsistent with DOE's own requirements as well as industry standards. This decision is now being reversed.
- The cesium ion exchange system could accumulate explosive concentrations of hydrogen gas. Furthermore, the hydrogen generation rates, hydrogen gas retention and release in waste tanks, and the ability of the mixing systems to prevent gas accumulation in the stored high-level waste tanks was not understood. DOE has now added an inerting system to the cesium ion exchange system to manage hydrogen flammability.
- One of the facilities in the WTP contains areas that by design will not be accessible after construction. The DNFSB was concerned that the design of equipment in these areas were not sufficiently robust to operate normally for 40 years without maintenance. The DNFSB encouraged DOE to further evaluate the performance criteria and validate that this equipment could in fact be expected to perform for this extended period of time. DOE conducted the study and is now correcting noted deficiencies and is also considering providing limit access to the areas for maintenance.
- In response to DNFSB concerns with the large number of weld defects and missing leak tests for a high-level waste vessel, DOE performed root cause analyses which identified significant weaknesses in vessel technical specifications, fabrication oversight, and engineers' understanding of safety requirements. DOE is now implementing corrective actions for these weaknesses.
- DOE proposed delegating their approval of safety-related expectations (codes, major design changes, and safety control modifications) to the contractor. As a result of the DNFSB's objections, DOE significantly modified their process and maintained their control of the standards and design of the WTP.
- The criteria proposed by the contractor to be used to accept a new, experimental concrete mixture was inadequate. As a result, additional acceptance criteria were developed to ensure the concrete's quality would be suitable.

High Enriched Uranium Materials Facility at Y-12 National Security Complex. The DNFSB has continued its design reviews of the High Enriched Uranium Materials Facility (HEUMF). Based on detailed reviews, the DNFSB identified concerns with important safety systems such as the structure, electrical, ventilation, and instrument and control (I&C) systems. Based on these DNFSB concerns, the contractor has made the electrical design more reliable, corrected the foundation design and added concrete details to the structure to better resist an earthquake, and is actively working to resolve additional safety concerns raised by the DNFSB.

Pit Disassembly and Conversion Facility. The DNFSB has been reviewing the structural design for the Pit Disassembly and Conversion Facility (PDCF) to be located at the Savannah River Site. The DNFSB has ensured the structural design criteria were adequate, the geotechnical evaluations were appropriate, and the soil-structure interaction analysis was adequate for the PDCF structures. In response to a DNFSB letter dated May 13, 2003, the contractor conducted a fire risk analysis to assess a seismically induced full-facility fire. The DNFSB is reviewing the final design to ensure that it is adequate and incorporates appropriate defense-in-depth.

Pantex Building 12-64 Upgrade. In a letter dated October 10, 2003, the DNFSB noted that DOE was not addressing the structural weaknesses of the bays in Building 12-64 during conceptual design of upgrades. The DNFSB emphasized the need to improve the structure's ability to withstand a potential earthquake and to establish a limit on explosive loading that appropriately accounts for known design deficiencies in the facility structure. As a result, the project was modified to include a structural repair to the building that should significantly reduce the likelihood of facility failure during an earthquake. In addition, the project has established an appropriate explosives limit to preclude impacting nearby facilities should there be an explosion.

High Efficiency Particulate Air Filter Testing at the Savannah River Site. High Efficiency Particulate Air (HEPA) filters provide an important confinement safety function in many DOE nuclear facilities. The Secretary of Energy committed to the DNFSB to maintain the Filter Test Facility (FTF) in Oak Ridge, Tennessee and to independently test important-to-safety HEPA filters to ensure they will perform as expected. In July 2003, the DNFSB noted that the Savannah River Site (SRS) had been installing HEPA filters in safety class and safety significant applications in nuclear facilities without testing the filters at the FTF. In response to the DNFSB, SRS replaced the vast majority of the incorrectly installed filters, and will replace the remaining few filters in the near future.

Nuclear Air Cleaning Handbook. The DNFSB has urged DOE to issue an update to the *Nuclear Air Cleaning Handbook*, DOE-HDBK-1169, which forms the technical basis for the ventilation systems in most DOE nuclear facilities. The previous version was published in 1976. After much involvement by the DNFSB, DOE issued an update to this important handbook in December 2003. The DNFSB will continue to ensure that the handbook is appropriately implemented.

Salt Waste Processing Facility at the Savannah River Site. The Salt Waste Processing Facility will be used to remove cesium, strontium and actinides from high-level waste before it is vitrified. In a June 18, 2004 letter, the DNFSB outlined safety risks associated with delays to the salt processing program and urged DOE not to eliminate funding for this important work. DOE has restored funding and is now pursuing a sound program plan that will accelerate waste stabilization and risk reduction. In an August 27, 2004 letter, the DNFSB raised concerns about the facility's confinement system failing during an earthquake, DOE is evaluating the DNFSB's concerns.

Hanford Plutonium Finishing Plant. Previously the DNFSB identified electrical deficiencies at the Plutonium Finishing Plant. Specifically, baseline short circuit calculations, which are used to confirm the adequacy of installed electrical equipment, were not consistent with the electrical configuration drawings. During this fiscal year, the contractor evaluated this situation and in June 2004 concluded that many of the electrical system protective devices in the facility have been applied above their rated capability resulting in an unsafe condition and a violation of the National Electrical Code. Actions to correct this situation are underway.

PERFORMANCE GOAL 4: NUCLEAR PROGRAMS AND ANALYSIS

DOE develops, maintains, and implements regulations, requirements, and guidance; and establishes and implements safety programs at defense nuclear facilities as necessary to ensure adequate protection of health and safety of the workers and the public.

OUTCOME: DOE will have acknowledged, acted upon, and/or resolved the health and safety issues raised by the DNFSB. In addition, follow-up technical evaluation of DOE's safety programs at defense nuclear facilities will verify necessary improvements in safety, and effective implementation of Integrated Safety Management principles.

FY 2004 Performance Objectives:

The DNFSB will continue to assess the adequacy of proposed changes to DOE directives to ensure that any revisions are appropriate and adequate. The results of reviews completed by the DNFSB will be provided to DOE for action. The DNFSB anticipates that approximately 25 DOE directives that may impact public and worker health and safety will require review, of which two or three are likely to require significant DNFSB and staff interaction to ensure satisfactory resolution of potential issues. The DNFSB also expects to be heavily involved in the efforts of the NNSA to establish its own directive system. It is estimated that 20 NNSA directives will also require review. As a result of these reviews, new or modified health and safety directives will be issued in an enhanced form, resulting in improved safety through standardized requirements and guidance that provide for adequate protection of the workers and the public.

The DNFSB will continue its reviews of DOE's implementation of ISM, as well as ongoing efforts to make ISM more effective. At least five reviews will be completed. Candidates for review include:

- Activity-level ISM implementation at sites with performance indicators judged to have higher than expected rates of abnormal occurrences related to worker protection.
- Activity-level ISM at several NNSA sites.
- Validation of at least one ISM review by the DOE Office of Oversight.
- Implementation of line oversight of ISM per DOE P 450.5 at one EM site and one NNSA site.
- Implementation of DOE's *Quality Assurance Improvement Plan.*
- Implementation or Recommendation 2000-2, *Configuration Management, Vital Safety Systems.*
- Implementation and effectiveness of ISM at defense nuclear facilities.

The DNFSB has noted that considerable progress has been made in the implementation of ISM, but that continued DOE efforts are necessary to maintain ISM systems and ensure continuous improvement across the complex. Specific functional areas will be sampled to a greater depth, such as training and qualification, quality assurance, nuclear criticality safety, software quality assurance, conduct of operations, readiness preparations, hoisting and rigging. As a result of these reviews, DOE will provide an adequate approach and schedule for resolution of identified issues that supports safe operation of defense nuclear facilities.

The DNFSB will continue its initiative to identify the potential issues associated with DOE's and NNSA's new policies on line oversight and contractor assurance. The DNFSB anticipates that this effort will require a series of public meetings and significant DNFSB and staff interaction with multiple federal and contractor agencies.

The DNFSB will verify that roles, responsibilities, experience, and competencies required to protect the workers and the public are explicitly defined and implemented for both DOE and its contractor personnel.

FY 2004 Measured Performance:

DOE Directives. As part of its ongoing review of new and revised DOE directives, the DNFSB and its staff evaluated and provided constructive critiques of 39 directives associated with, but not limited to, worker protection management, electrical safety, software quality assurance, and DOE's Occurrence Reporting and Processing System. At year's end, both staffs were in the process of resolving issues on 14 pending directives to improve the content, clarity, and consistency in safety requirements and guidance. Examples include:

- **Applicability of DOE Order Requirements.** The DNFSB has been instrumental in preventing enactment of a DOE proposal to restrict "the applicability of DOE Orders to only major facility management contractors." This proposal would have the detrimental effect of undermining the application of specific safety-related requirements to a wide range of DOE contractors and sub-contractors, including contractors whose personnel are conducting hands-on work on nuclear materials.

- **Electrical Safety.** In June 2001, the DNFSB urged DOE to take a proactive stance to ensure adequate electrical safety. DOE agreed to update the *Electrical Safety Handbook* in August 2002. However, in July 2003 the DNFSB learned that DOE had deleted much of the technical content in the proposed revision. The DNFSB informed DOE that this was unacceptable, especially in light of the high rate of electrical safety incidents observed across the defense nuclear complex. DOE agreed to revise the handbook to include the details of electrical safety and a guidance for effective electrical safety program . The DNFSB worked closely with DOE to ensure appropriate technical safety content was included. In July 2004, DOE submitted a revised handbook to the DNFSB and to the field for comment. The DNFSB provided detailed feedback to DOE on this latest version, and final publication of the much-improved handbook is expected before the end of 2004.

- **DOE Functional Area Qualification Standards.** During the past three years, the DNFSB has driven DOE to upgrade and incorporate 30 functional area qualification standards for federal employees into the DOE Directives System. During the past year, the DNFSB's staff reviewed and evaluated the final 14 DOE functional area qualification standards in such areas as nuclear safety, construction management, facility maintenance, technical training, and civil engineering. This effort significantly improved the

technical content and rigor of these DOE qualification standards, and will help to raise the technical competence of DOE personnel.

- **Hoisting and Rigging Safety.** The DNFSB continued to follow closely DOE's programs, policies, and practices in activities related to hoisting and rigging at defense nuclear facilities. Insights from a number of field reviews were integrated to provide substantive input toward revising DOE-STD-1090-2001, *Hoisting and Rigging*. As a result of the DNFSB's observations and input, significant revisions were made to this standard that will further enhance the safety of hoisting and rigging activities throughout the DOE complex.

Oversight of Complex, High-Hazard Nuclear Operations. During FY 2004, the DNFSB conducted eight public hearings to examine DOE's methods of ensuring safety at defense nuclear facilities. The DNFSB was concerned that changes in oversight contemplated by DOE and NNSA could unintentionally reduce nuclear safety. The DNFSB also sought to benefit from the lessons learned as a result of investigations conducted by the Columbia Accident Investigation DNFSB and the U.S. Nuclear Regulatory Commission following the discovery of the deep corrosion in the reactor vessel head at the Davis-Besse Nuclear Power Station. The DNFSB concluded that there was cause for concern with regard to the potential increase in the possibility of nuclear accidents in the nuclear defense complex as evident in: (1) DOE's increased emphasis on productivity at the possible expense of safety, (2) the loss of technical competency and understanding at high levels of DOE's organizational structure, (3) the apparent absence of a strong safety research focus, and (4) the reductions in the central oversight of safety. On May 21, 2004, the DNFSB issued Recommendation 2004-1, *Oversight of Complex, High-Hazard Nuclear Operations*, to ensure that the likelihood of a serious accident, facility failure, construction problem, or nuclear incident will not be increased as a result of DOE's well-intentioned changes. On July 21, 2004, the Secretary of Energy accepted the DNFSB's Recommendation and tasked a team to begin developing an adequate implementation plan. Final submission of the plan is expected before the end of the year.

10 CFR 851, *Worker Safety and Health.* The Bob Stump National Defense Authorization Act, Public Law 107-314, directed DOE to promulgate regulations on worker safety and health, rather than rely exclusively on a contractual approach to establish safe and healthy workplaces. On December 8, 2003, DOE provided notification of a proposed rule on worker protection, Title 10 Code of Federal Regulations, Part 851 (10 CFR 851), *Worker Safety and Health*, in the Federal Register. The DNFSB is required by law to review and evaluate all applicable DOE Orders, regulations, and requirements. The DNFSB conducted a detailed review of the proposed rule and provided comments to DOE on January 23, 2004. As a result, the Secretary suspended the rulemaking until the DNFSB's issues could be resolved. The DNFSB worked closely with DOE to develop a new regulation, and in June 2004 a draft of the revised rule was sent to the Office of Management and Budget to be prepared for publication in the Federal Register. The new Rule will assist in implementing ISM at the activity level, helping to assure the safety of the workforce.

Software Quality Assurance (SQA). The DNFSB issued Recommendation 2002-1, *Quality Assurance for Safety-Related Software*, to correct problems caused by inadequate design, implementation, testing, and configuration management of safety-significant computer software. During the past year, DOE has responded to the Recommendation by developing new directives for SQA and software safety, training personnel whose duties involve SQA, and improving the quality of selected software codes used across the complex for the analysis of potential accidents.

Implementation of ISM: Activity-Level Work Planning. The DNFSB reviewed the incorporation of safety into work planning at several NNSA sites, evaluating how each site accomplished the five ISM core functions (define the scope of work, analyze the hazards, develop and implement controls, perform the work, and provide feedback and continuous improvement) for programmatic work as well as maintenance. The DNFSB's reviews revealed significant deficiencies in the ability to effectively incorporate ISM into the process for work planning and control. Problems were noted in the tailoring of generic work documents, the processes used to identify and analyze hazards, the development of appropriate and unambiguous controls to be included in work packages, the use of a hierarchy of controls, and the ability to effectively identify areas for improvement and take action accordingly. In a letter dated May 21, 2004, the DNFSB noted that actions to address some of these issues were being developed; however, significantly more senior management attention was required. DOE and NNSA are just beginning to address these issues. The DNFSB will continue to work with them throughout FY 2005 to improve performance in this key area, beginning with a workshop to be held during the first quarter.

Site Specific Safety Reviews. The development of a comprehensive safety basis and the identification and selection of an appropriate control set are essential cornerstones of safe operation at defense nuclear facilities. The DNFSB conducted numerous reviews of the site-specific safety bases throughout the DOE complex. In particular, the DNFSB reviewed the critical assumptions used in the development of the safety bases as well as the control strategies used to prevent and mitigate accident scenarios of concern for facilities and activities such as the SRS and Hanford tank farms, the WIPP Mobile Waste Characterization and Loading Units, the Pantex Plant Onsite Transportation Program, LANL's "Armando" subcritical experiment, Hanford Spent Nuclear Program's Sludge Removal Project, Sandia National Laboratories' (SNL) Auxiliary Hot Cell Facility, and the NTS Device Assembly Facility, G-tunnel, and Onsite Transportation Programs.

During the course of these reviews, the DNFSB identified a number of specific instances where inappropriate assumptions and methodologies were used in the development of safety bases. These included analyses which did not always use bounding input assumptions and which implicitly credited non-qualified plant indications and equipment in the development of the safety analyses. These deficiencies resulted in situations where the safety analyses may not have appropriately bounded the actual hazard conditions for the facilities concerned. As a result of these concerns, DOE/NNSA and its contractors have implemented a number of corrective actions to address these issues. For example:

- At the Pantex Plant, multi-unit nuclear explosive operations remain suspended for the present until further testing and analysis can resolve the concerns or until adequate controls can be developed. Additional controls have also been imposed on some operations to assure safety given new information regarding electrostatic discharge environments.

- At the Hanford Tank Farms, DOE rewrote the Technical Safety Requirements to reinstate key controls (such as Process Control Plans) that the DNFSB had discovered were improperly eliminated. A second independent review was convened to ensure all safety controls had been implemented. The contractor has increased the frequency of taking key tank waste measurements so that current waste conditions were better understood, due to the DNFSB's discovery that the contractor had inadvertently put a tank at risk of retaining and releasing significant quantities of flammable gas.

- DOE is revising the Basis for Interim Operation (BIO) for the WIPP Mobile Waste Characterization and Loading Units to address the significant technical deficiencies identified by the DNFSB, including incorrect modeling of accident scenarios; lack of proper documentation of accident analyses; and potentially inadequate identification and classification of controls for protection of the public and workers.

- The DNFSB's review of a safety basis at SNL identified inadequacies that appear to reflect fundamental weaknesses in the implementation of nuclear safety requirements at the site. Allowing these inadequacies to go uncorrected, permits the startup of a facility without an assurance that all hazards have been adequately addressed. These inadequacies also compromise the long-term integrity of the change control system, which relies on adequate safety analyses to serve as a baseline for assessing the impact of future changes. Because of the fundamental nature of the deficiencies identified in this safety basis, the DNFSB has concerns regarding the other safety bases currently approved for use at SNL. The DNFSB has just initiated discussions with NNSA to resolve these concerns.

Recommendation 2002-3. In Recommendation 2002-3, *Requirements for the Design, Implementation, and Maintenance of Administrative Controls*, the DNFSB identified the need for DOE to improve its guidance and expectations with respect to important administrative controls at defense nuclear facilities. As a result of the DNFSB's Recommendation, the Department has developed and implemented a plan to improve the reliability and effectiveness of administrative controls that serve safety functions. Recent efforts have focused on development of a standard governing the development and implementation of specific administrative controls in the defense nuclear complex. Additionally, DOE has developed a set of training materials to be used to introduce the new and revised requirements to its field elements. The DNFSB worked closely with DOE to finalize this guidance to ensure that a proper safety focus is afforded on administrative controls that provide important safety-related functions at DOE facilities. The document was published in August 2004 as DOE-STD-1186-2004. The DNFSB is now working with DOE to evaluate its implementation across the complex.

NNSA Training and Qualification. The DNFSB noted concerns with Federal oversight of training and qualification at the Pantex Plant. Most notably, required reviews of contractor training and qualification programs were not being performed. In July, the DNFSB broadened their concern to all NNSA sites, citing the concern that failure to verify the adequacy of training and qualification programs would raise questions regarding the reliability of the significant number of administrative control programs within the NNSA system. In response, NNSA initiated a review at all field sites, and identified three sites, in particular, that did not meet program requirements. However, by August 2004, the DNFSB found that senior NNSA management had not taken prompt action to upgrade the programs at these three sites. A letter to NNSA identified this situation as unacceptable—NNSA was given 45 days to define the bounds of the problem, and 30 days to develop a corrective action plan.

Functions Responsibilities and Authorities (FRA) Documents. The DNFSB continued to follow DOE activities in the closure process associated with Recommendation 98-1, *Resolution of Issues Identified by DOE Internal Oversight*. DOE is also obligated under DOE Manual 411.1, *Safety Management Functions Responsibilities and Authorities (FRA) Manual* to annually update the FRA manual to reflect changes in organizational responsibilities and authorities. After significant effort on the part of the DNFSB, DOE has developed a credible FRA manual at the corporate level, and sub-tier FRAs in key DOE organizational elements (e.g., the Office of Environmental Management, and NNSA). The DNFSB will continue to work with the DOE

program offices throughout FY 2005 to refine their FRA documents to ensure safety roles and responsibilities are clearly defined.

NNSA's Facility Representative Staffing and Training. In a letter dated May 14, 2004, the DNFSB noted concerns with the insufficient staffing levels of Facility Representatives (FR), and the inadequate level of activity-specific hazards training, at the Pantex Site Office, the Sandia Site Office, and the Los Alamos Site Office. The DNFSB broadened their concern to all NNSA sites, citing a concern that inadequate staffing of FRs at the NNSA sites will result in significant challenges to NNSA's ability to monitor nuclear weapon activities and perform assigned safety responsibilities. In response, NNSA is taking steps to improve its activity-specific hazard training for FRs, and will conduct more rigorous staffing analyses to ensure that staffing levels for NNSA's FRs are sufficient.

Chapter 3
Auditor's Report and Financial Statements

Summary

The DNFSB is a micro agency with a staff of 97 FTEs and $19.4 million in budget authority for FY 2004. To ensure that scarce resources are dedicated to fulfilling the demanding health and safety oversight mission, the DNFSB has adopted the "economies of scale" philosophy for obtaining needed administrative support services, relying on Interagency Agreements with the Bureau of the Public Debt's Administrative Resource Center, the General Services Administration's Heartland Finance Center, and the Public Health Service to obtain support for accounting, personnel, payroll and health services on a fee-for-service basis. Consequently, the DNFSB does not employ any accountants on its small administrative staff, as it is neither practical or desirable for us to attempt to duplicate the speciality services offered to small agencies by authorized service providers such as GSA.

As noted in Chapter 1 of this report, FY 2004 is the first year that the DNFSB is required to prepare an audited financial statement under the requirements of the Accountability of Tax Dollars Act of 2002. Due to the unbudgeted expense for the audit and the fact that both GSA and the Bureau of Public Debt were not prepared to support an audit of their respective accounting and payroll support systems, the DNFSB requested and received a waiver of the audit requirements for FY 2003 from the Office of Management and Budget (OMB).

As has been the case with many small agencies, the DNFSB encountered significant difficulties in completing its FY 2004 financial audit by the November 15, 2004 deadline. As a starting point, the DNFSB contracted with a private CPA firm, Cotton & Company LLP in July 2004, to conduct an audit of the DNFSB's finances and prepare the required opinion as to whether the DNFSB's financial statements are presented fairly in accordance with generally accepted accounting principles. The DNFSB found the auditor's demands for data and reports to be very burdensome on our small administrative staff due to the conflicting demands of processing final FY 2004 transactions, establishing a workable FY 2005 financial plan under various continuing resolution scenarios, and preparing the DNFSB's *FY 2006 Budget Request to OMB*.

Moreover, our financial services provider, the GSA Heartland Finance Center, was inundated with simultaneous data requests from not only the DNFSB's independent auditor, but also the auditors contracted by the many small agencies that GSA services. Consequently, the GSA accounting staff was unable to satisfy our auditor's data needs and respond to questions in a timely manner, adding further delay to the audit process.

Small agencies such as the DNFSB do not have sufficient resources, in particular a full-time accountant, to satisfy the independent auditor's needs for timely financial information and reports, when conflicting budget formulation and execution deadlines must be met. We strongly recommend that the November 15 deadline be relaxed for micro agencies, as the financial risks from delayed reporting are small.

The DNFSB also was surprised to learn that neither GSA's Heartland Finance Center nor the Bureau of the Public Debt's Administrative Resource Center were able to produce an independent Statement of Auditing Standards 70 (SAS 70) audit of their respective accounting and payroll support systems. Contrary to previous

written assertions, GSA officially informed the DNFSB and its other clients on September 7, 2004 that a SAS 70 audit would not be conducted until the end of the FY 2005 accounting cycle. A copy of GSA's notification letter to the DNFSB is included in Appendix B of this document. Having already invested substantial contractual funds for our independent audit, the absence of the SAS 70 audit on the GSA accounting system forced us to spend additional funds and extend the auditing schedule for supplemental testing by Cotton and Company, LLP. The FY 2004 independent audit was completed on January 15, 2005.

With FY 2004 being the first year that the DNFSB conducted an independent financial audit, Cotton & Company issued a disclaimer of opinion on the Consolidated Statement of changes in Net Position, the Combined Statement of Budgetary Resources, and the Consolidated Statement of Financing since opening balances for FY 2003 were not audited.

In addition to the opening balances issue discussed above, Cotton & Company was not able to express an opinion of the financial statements as of and for the year ending September 30, 2004 due to questions concerning the DNFSB and GSA financial reporting process. In particular, DNFSB was unable to provide our auditor with sufficient documentation, in a timely manner, to satisfy questions concerning certain accounting transactions.

For example, our independent auditor cited the fact that DNFSB and its external service provider, GSA, did not effectively coordinate removal of disposed and obsolete property from DNFSB's accounting records in a timely manner. The DNFSB performed an inventory after the close of the fiscal year, and our auditor noted that the inventory and related correcting entries were reasonable. Due to limited resources, the DNFSB was unable to complete this property reconciliation before the end of FY 2004.

Due to limited resources and conflicting workload demands on our small staff, the DNFSB and the GSA accounting staff were unable to answer all of our auditor's questions during the audit. For example, the audit report stated that during testing, the auditor identified several payables relating to accounting entries processed in a prior fiscal years that appeared invalid, and that the DNFSB staff did not have the time to assess the validity of material payables outstanding as of September 30, 2004. The DNFSB has thoroughly researched the 3 accounting transaction in question, and found that a $156,000 accrual for taxes and other potential payments in the rent account, and 2 commercials accounts with open obligations of $24,000 and $12,000 respectively were valid transactions. Unfortunately, the timing of our independent audit coincides with our busiest budget workload period, resulting in open questions in our auditor's report.

On a positive note, the auditing work conducted by Cotton and Company, LLP for FY 2004 will establish a baseline of accounting information in preparation for our FY 2005 financial audit. Also, the experience gained by our staff during the FY 2004 audit process has provided valuable "lessons learned" for the DNFSB to plan for future information requests in support of our independent auditors and resolved any outstanding audit questions. Assuming that our interagency accounting and payroll service providers conduct their respective independent SAS 70 audits on time for FY 2005, many of the audit problems experienced by the DNFSB during our first financial audit attempt should not recur.

Review of DNFSB Internal Controls

As part of our independent auditor's report on internal control, Cotton & Company reviewed DNFSB's internal control over financial reporting by obtaining an understanding of our internal control, determining if internal control had been placed in operation, assessing control risk, and performing tests of control. Our auditor noted three matters involving internal control and its operation that they consider to be reportable conditions, and considers the first two reportable conditions to be material weaknesses.

1. **Accounting for Property and Equipment** - DNFSB and its external service provider, GSA, did not effectively coordinate the removal of disposed and obsolete property from DNFSB's accounting records in a timely manner, resulting in the balance sheet line item *General Property, Plant and Equipment* being overstated by $778,000. Also, DNFSB had not established a process to track and analyze expenditures related to investment in internal-use software. Therefore, we did not have a basis to determine if expenditures related to internal-use software projects constituted capital assets subject to depreciation rules. The Board agrees with our auditor's findings in this area and is implementing corrective actions during FY 2005 to address these problems.

2. **Financial Reporting** - The auditor stated that, in their opinion, GSA, the DNFSB's external accounting services provider, did not have sufficient accounting procedures to ensure that transactions processed and financial statements prepared for DNFSB were complete and accurate. Our auditor noted nine areas of internal control deficiencies in GSA's accounting support system. It should be noted that GSA accounting officials do not agree with many of the findings of our auditor, and have provided the DNFSB with written comments. In the interest of fairness, the DNFSB has included GSA's comments in this report. The DNFSB will attempt to resolve our auditor's finding with GSA accounting officials and implement corrective actions, as appropriate, in FY 2005.

3. **Information Systems** - Out auditor identified 20 control weaknesses in the six GAO *Federal Information System Controls Audit Manual* (FISCAM) areas. Most of these control weaknesses are known to the DNFSB, and are the result of a lack of overarching policies and procedures to guide ongoing information technology operations. As a small agency with limited resources, the DNFSB has focused its resources on providing reliable IT support operations, and recognizes that the preparation of overarching policies and procedures has not received priority attention. The DNFSB will make a reasonable and cost-effective effort in FY 2005 to correct the internal control weaknesses that present the highest potential impact to our IT resources.

COTTON & COMPANY LLP
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Chairman of the Board
Defense Nuclear Facilities Safety Board

Independent Auditor's Report on Compliance with Laws and Regulations

We were engaged to audit the financial statements of the Defense Nuclear Facilities Safety Board (DNFSB) as of and for the year ended September 30, 2004, and have issued our report thereon dated January 11, 2005, in which we disclaimed an opinion on those financial statements.

DNFSB management is responsible for complying with laws and regulations applicable to the agency. We performed tests of its compliance with certain provisions of laws and regulations, noncompliance with which could have a direct and material effect on the determination of financial statement amounts, and certain other laws and regulations specified in Office of Management and Budget (OMB) Bulletin 01-02, *Audit Requirements for Federal Financial Statements*, including requirements referred to in the Federal Financial Management Improvement Act (FFMIA) of 1996. We limited our tests of compliance to these provisions, and we did not test compliance with all laws and regulations applicable to DNFSB.

Under FFMIA, we are required to report whether DNFSB's financial management systems substantially complied with federal financial management system requirements, applicable federal accounting standards, and the United States Government Standard General Ledger (SGL) at the transaction level. To meet this requirement, we performed tests of compliance with FFMIA Section 803(a) requirements. Results of our tests disclosed instances, described below, indicating that DNFSB's financial management systems did not substantially comply with federal financial management system requirements, applicable federal accounting standards, and SGL at the transaction level.

DNFSB was not in substantial compliance with federal financial management system requirements, as follows:

- DNFSB's core financial system was not able to provide complete, reliable, and consistent financial management information on programs in a timely manner, thus affecting management's ability to provide financial information for managing current operations to the public in a timely manner.

- Access control, segregation-of-duty, and other general control weaknesses existed, as described more fully in the Independent Auditor's Report on Internal Control.

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DNFSB was not in substantial compliance with federal accounting standards, because it could not support the valuation of several financial statement line items, as described more fully in the Independent Auditor's Report and Independent Auditor's Report on Internal Control.

DNFSB was not in substantial compliance with SGL at the transaction level, because certain budgetary transactions in the Pegasys general ledger did not post in accordance with SGL criteria. As a result, material "worksheet" adjustments were required to compile the combined statement of budgetary resources, as described more fully in the Independent Auditor's Report on Internal Control.

DNFSB management is responsible for financial management systems within the agency. DNFSB should assign high priority to implementing corrective actions for these FFMIA related-matters consistent with requirements of OMB Circular A-50, *Audit Followup*.

Results of our tests of compliance disclosed one additional instance of noncompliance with laws and regulations that is required to be reported under *Government Auditing Standards* and OMB Bulletin 01- 02. The Independent Auditor's Report on Internal Control describes certain deficiencies in processing vendor payments in accordance with provisions of the Prompt Payment Act (Act). These deficiencies resulted in noncompliance with the Act provision requiring interest penalties to be paid to vendors for late payments.

Providing an opinion on compliance with certain provisions of laws and regulations was not an objective of our work; accordingly, we do not express such an opinion.

This report is intended solely for the information and use of DNFSB management, OMB, and Congress and is not intended to be and should not be used by anyone other than these specified parties.

COTTON & COMPANY LLP

Matthew H. Johnson, CPA, CISA

January 11, 2005
Alexandria, Virginia

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Chairman of the Board
Defense Nuclear Facilities Safety Board

Independent Auditor's Report

We were engaged to audit the accompanying consolidated balance sheet of the Defense Nuclear Facilities Safety Board (DNFSB) as of September 30, 2004, and the related consolidated statements of net cost, changes in net position, and financing, and the combined statement of budgetary resources for the year then ended. DNFSB management presented amounts as of and for the year ended September 30, 2003. An audit of these balances was not within the scope of our engagement, and thus we provide no opinion on the prior-year balances presented. These financial statements are the responsibility of DNFSB management.

Beginning Balances

We were unable to satisfy ourselves with certain financial statement line items (and related footnote disclosures), because the scope of our audit precluded us from auditing beginning fiscal year 2004 balances used to compile the following:

Consolidated statement of changes in net position line items	**Amount (Rounded)**
Cumulative results of operations beginning balances	$214,000
Unexpended appropriations beginning balances	$6,423,000
Combined statement of budgetary resources line items	
Unobligated balance beginning of period	$2,478,000
Spending authority from offsetting collections collected	$4,000
Obligations incurred - Direct	$21,860,000
Unobligated balances apportioned	$982,000
Obligated balance, net, beginning of period	$4,962,000
Consolidated statement of financing line items	
Net obligations	$20,939,000
Change in budgetary resources obligated for goods, services, and benefits ordered but not yet provided	$161,000
Increase in exchange revenue receivable from the public	$6,000
Revaluation of assets or liabilities	$109,000
Increase in annual leave liability	$812,000

In addition, we were unable to satisfy ourselves with respect to certain of DNFSB's financial statement line items (and related footnote disclosures) contained on the consolidated balance sheet and consolidated statement of net cost, because DNFSB could not provide sufficient evidence to support amounts reported and disclosures made in the consolidated financial statements as of and for the year ended September 30, 2004, thereby limiting the scope of the audit. Details follow under the next two captions.

Internal Use Software

As explained more fully in the Independent Auditor's Report on Internal Control, DNFSB did not have a process to analyze expenditures in accordance with criteria contained in Statement of Federal Financial Accounting Standards (SFFAS) No. 10, *Accounting for Internal Use Software,* and properly capitalize and expense costs related to investments in internal use software. Thus, DNFSB was unable to provide sufficient documentation, in a timely manner, to satisfy us that consolidated balance sheet line item *General Property, Plant and Equipment* and net cost line item *Gross Cost with the Public,* valued at $177,000 and $19.2 million, respectively, were fairly stated. *Gross Cost with the Public* is comprised primarily of expenses related to payments for payroll, benefits, services and equipment and should include expenses related to the amortization of software.

Financial Reporting Process

As explained more fully in the Independent Auditor's Report on Internal Control, DNFSB's financial reporting process was ineffective. As a result, management was unable to provide sufficient documentation, in a timely manner, to satisfy us that the following were fairly stated:

Consolidated balance sheet and net cost line items	Amount (Rounded)
Fund balance with Treasury	$5,950,000
Intragovernmental accounts payable	$271,000
Accounts payable with the public	$474,000
Intragovernmental gross costs	$2,693,000
Gross costs with the public	$19,243,000

We were unable to apply other auditing procedures regarding the three scope limitations discussed above. Accordingly, we are not able to express, and we do not express, an opinion on the financial statements as of and for the year ended September 30, 2004.

DNFSB management's discussion and analysis is not a required part of the financial statements, but is additional information required by the Federal Accounting Standards Advisory Board and Office of Management and Budget (OMB) Bulletin No. 01-09, *Form and Content of Agency Financial Statements*. This information has not been subjected to auditing procedures; accordingly, we express no opinion on this information.

In accordance with *Government Auditing Standards*, we have also issued reports dated January 11, 2005, on our consideration of DNFSB's internal control and on its compliance with laws and regulations. Those reports, which disclose material weaknesses and a reportable condition in internal control and noncompliance with the Federal Financial Management Improvement Act, are integral parts of a report prepared in accordance with *Government Auditing Standards* and should be read in conjunction with this report in considering the results of our work.

COTTON & COMPANY LLP

Matthew H. Johnson, CPA, CISA

January 11, 2005
Alexandria, Virginia

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Chairman of the Board
Defense Nuclear Facilities Safety Board

INDEPENDENT AUDITOR'S REPORT ON INTERNAL CONTROL

We were engaged to audit the financial statements of the Defense Nuclear Facilities Safety Board (DNFSB) as of and for the year ended September 30, 2004, and have issued our report thereon dated January 11, 2005, in which we disclaimed an opinion on those financial statements. These financial statements are the responsibility of DNFSB management.

In planning and performing our work, we considered DNFSB's internal control over financial reporting by obtaining an understanding of its internal control, including accounting functions performed by DNFSB's external accounting services provider the General Services Administration (GSA), determining if internal control had been placed in operation, assessing control risk, and performing tests of control. We limited internal control testing to those controls necessary to achieve objectives described in Office of Management and Budget (OMB) Bulletin 01-02, *Audit Requirements for Federal Financial Statements*. We did not test all internal controls relevant to operating objectives as broadly defined by the Federal Managers' Financial Integrity Act of 1982 (FMFIA), such as those controls relevant to ensuring efficient operations. The objective of our work was not to provide assurance on internal control. Consequently, we do not provide an opinion on internal control.

Our consideration of internal control over financial reporting would not necessarily disclose all matters in internal control over financial reporting that might be reportable conditions. Under standards issued by the American Institute of Certified Public Accountants (AICPA), reportable conditions are matters coming to our attention relating to significant deficiencies in the design or operation of internal control that, in our judgment, could adversely affect DNFSB's ability to record, process, summarize, and report financial data consistent with management assertions in the financial statements.

Material weaknesses are reportable conditions in which the design or operation of one or more internal control components does not reduce to a relatively low level the risk that misstatements in amounts that would be material in relation to the financial statements being audited may occur and not be detected within a timely period by employees in the normal course of performing their assigned functions. Because of inherent limitations in internal control, misstatements, losses, or noncompliance may nevertheless occur and not be detected.

We noted three matters involving internal control and its operation that we consider to be reportable conditions. We consider the first two to be material weaknesses under standards established by AICPA and OMB Bulletin No. 01-02. None of these matters was reported in DNFSB's FMFIA report.

1. ACCOUNTING FOR PROPERTY AND EQUIPMENT

DNFSB's accounting for property and equipment did not comply with federal accounting standards. Issues noted are detailed below.

Accounting for Disposed and Obsolete Property and Equipment

DNFSB and its external service provider, GSA, did not effectively coordinate removal of disposed and obsolete property from DNFSB's accounting records in a timely manner. Statement of Federal Financial Accounting Standards (SFFAS) No. 6, *Accounting for Property, Plant, and Equipment,* states that:

> *In the period of disposal, retirement, or removal from service, general PP&E shall be removed from the asset accounts along with associated accumulated depreciation/amortization.*

Results of testing we performed as of July 31, 2004, indicated that the cost component of consolidated balance sheet line item *General Property, Plant and Equipment* was overstated by $778,000.

To address the condition noted above and properly value reported property and equipment (excluding internal use software) as of September 30, 2004, DNFSB performed an inventory after the close of the fiscal year. We assessed the inventory and related correcting entries and determined that they were reasonable.

Internal Use Software

DNFSB had not established a process to track and analyze expenditures related to investments in internal-use software using criteria outlined in SFFAS No. 10, *Accounting for Internal Use Software*, which states that:

> *Entities should capitalize the cost of software when such software meets the criteria for general property, plant, and equipment (PP&E).*

DNFSB had not developed a process to analyze historical (before FY 2004) and current (FY 2004) expenditures related to investments in internal-use software. As a result, it did not have a basis to determine if expenditures related to internal-use software projects constituted capital assets. This condition contributed to our disclaimed opinion.

Recommendations

We recommend that the general manager perform the following to properly account for disposed and obsolete property:

1.A Review the capitalized property listing maintained by GSA before quarterly financial reporting and perform procedures to ensure that:
- Listed items continue to exist and are valued appropriately.
- The capitalized listing is complete.

1.B Provide necessary information to GSA to record correcting entries in Pegasys.

1.C Review correcting entries recorded by GSA for accuracy.

We recommend that the general manager perform the following to properly account for internal-use software:

1.D Identify all internal-use software currently in service and determine its proper valuation for financial reporting purposes.

1.E Develop a systematic process to identify and assign proper valuation to new internal-use software initiatives.

2. FINANCIAL REPORTING

DNFSB maintained ineffective internal control over its financial reporting process. GSA, DNFSB's external accounting services provider, did not have sufficient accounting procedures to ensure that transactions processed and financial statements prepared for DNFSB were complete and accurate and in compliance with applicable laws and regulations. In addition, DNFSB lacked adequate internal control to detect material misstatements and noncompliance with laws and regulations. We noted the following internal control deficiencies, material misstatements in draft financial statements, and noncompliance with laws and regulations, all of which, with the exception of GSA's failure to obtain a Statement of Auditing Standards (SAS) 70 review, were undetected by DNFSB:

- GSA did not obtain an independent auditor report over its internal control via a SAS 70 review as required by OMB memorandum M-04-11, *Service Organization Audits.*

- Journal voucher entries prepared by GSA accountants did not require review and approval by supervisory accountants before posting to the Pegasys general ledger.

- GSA accountants recorded material "worksheet entries" ($22 million for June 30, 2004, reporting) outside of Pegasys to compensate for transactions that did not post in accordance with United States Standard General Ledger (SGL) criteria when preparing the combined statement of budgetary resources.

- GSA lacked adequate segregation of duties for establishing vendors in Pegasys. The same technician could both create/modify and approve vendor information in the system.

Further, OMB Circular A-127, *Financial Management Systems,* states:

> *The agency financial management system shall be able to provide financial information in a timely and useful fashion to comply with internal and external reporting requirements, including...the requirements for financial statements prepared in accordance with the form and content prescribed by OMB and reporting requirements prescribed by Treasury.*

Recommendations

We recommend that the general manager:

2.A Determine if DNFSB has adequate and qualified resources to review GSA-prepared accounting transactions and financial statements.

2.B Modify DNFSB's contract with GSA to require accounting services that comply with significant provisions of the Federal Financial Management Improvement Act and adhere to internal control requirements detailed in GAO's *Standards for Internal Control in the Federal Government,* including proper segregation of duties, and OMB's *Service Organization Audits*. If GSA cannot provide accounting services in accordance with the noted criteria, then DNFSB should consider contracting with another external service provider.

2.C Coordinate with GSA to develop a detailed financial reporting plan for FY 2005, including milestone dates and task assignments.

2.D Review outstanding accounts payable as of September 30, 2004; determine validity; prepare adjusting entries as necessary; and ensure that a concise audit trail is maintained.

3. Information Systems

DNFSB is to be commended for making progress in addressing known control deficiencies. Specifically, it:

- Recently developed and tested a continuity of operations plan (COOP).
- Is implementing an online security awareness training program for all users.
- Is voluntarily undergoing a National Institute of Standards and Technology (NIST) Program Review for Information Security Management Assistance (PRISMA).

We did, however, identify significant control weaknesses in each of the six GAO *Federal Information System Controls Audit Manual* (FISCAM) areas, which we summarize in the appendix.

Most of the control weaknesses are the result of a lack of policies and procedures to effectively guide information technology operations. These weaknesses represent a significant risk to the

overall integrity and continued operations of DNFSB's information resources. They also increase the risk of a loss of system availability, unauthorized access, and data processing errors.

***

With respect to internal control over DNFSB's performance measures, we obtained an understanding of the design of significant internal control relating to existence and completeness assertions, as required by OMB Bulletin 01-02. Our procedures were not designed to provide assurance on internal control over reported performance measures; accordingly, we do not provide an opinion on such control.

We noted other nonreportable conditions involving internal control that we will report to DNFSB management in a separate letter.

This report is intended solely for the information and use of DNFSB management, OMB, and Congress and is not intended to be and should not be used by anyone other than these specified parties.

COTTON & COMPANY LLP

Matthew H. Johnson, CPA, CISA

January 11, 2005
Alexandria, Virginia

APPENDIX

INFORMATION SYSTEMS CONTROL FINDINGS AND RECOMMENDATIONS

Results of our testing identified specific control weaknesses in the six FISCAM categories. These findings and our recommendations provide detail for Finding No. 3, Information Systems, in the accompanying Independent Auditor's Report on Internal Control.

Entity-Wide Security Program Planning and Management Controls

1. DNFSB did not perform and document independent risk assessments on a regular basis or when changes to systems, facilities, or other conditions occurred.

2. The General Support System (GSS) has not been subjected to a certification and accreditation processes every 3 years or when major changes occur. The GSS has not been authorized or accredited by the managers whose mission it supports.

3. DNFSB had not documented a security program plan that addresses all major facilities and operations, has been approved by key affected parties, and covers topics prescribed by OMB Circular A-130, Management of Federal Information Resources, and NIST Special Publication (SP) 800-18, Guide for Developing Security Plans for Information Technology Systems, for general support systems.

4. DNFSB had not defined a security management structure that clearly assigns security responsibilities to all system users. The Board does not require that users agree to specific rules of behavior while using government information systems.

5. DNFSB had not documented a computer incident response plan or policy that monitors access, investigates apparent security violations, and requires appropriate remedial action.

6. Security-related personnel policies forcing either job rotation or mandatory vacations in key IT positions do not exist. Key IT positions with full control over critical internal controls have not been identified.

7. Senior management did not initiate prompt action to correct known deficiencies.

Access Controls

8. DNFSB had not classified information systems according to their criticality and sensitivity.

9. Management did not maintain a current list of authorized users and their authorized level of access. There is not a process in place to record system access authorizations and review system accounts against those authorizations on a regular basis.

10. DNFSB had not established adequate physical and logical controls to prevent or detect unauthorized access.

    a. Some employees with access to the server room have more than one key card with access to the room.
    b. Visitors to the server room are not recorded in a visitor log.
    c. Policy does not exist that documents prohibited actions in the server room including eating, drinking, and allowing visitors to have unescorted access.
    d. Password complexity that is required by policy is not enforced systematically.
    e. Screen saver controls are controlled by the end users. Therefore, controls that require a password and set the time period for inactivity are not consistently enforced.

Application Software Development and Program Change Controls

11. DNFSB had not developed a System Development Life Cycle (SDLC) methodology consistent with generally accepted concepts and practices to provide a structured approach to selecting software and managing software configurations.

12. System processing features and program/configuration modifications were not authorized.

13. New and revised software was not tested or formally approved.

System Software Controls

14. Controls were not adequate to limit access to system software.

15. DNFSB did not adequately monitor access to and use of system software including failed access attempts, use of sensitive utilities, and execution of sensitive commands.

16. DNFSB did not control system software changes through policies and procedures.

Segregation-of-Duty Controls

17. Policies and procedures for segregating incompatible information technology duties did not exist.

18. Daily operating procedures for the server room were not documented, and prohibited actions were not identified.

19. Documented job descriptions for key IT personnel did not reflect segregation-of-duty principles and did not cover restricted activities.

Service Continuity Controls

20. DNFSB had not established sufficient controls to prevent and minimize potential system damage and service interruptions. Specifically, controls that protect back-up tapes and environmental controls over the server room were inadequate.

Recommendations

These recommendations address the 20 control weaknesses identified above. The number of the corresponding weakness follows our recommendation in parentheses.

We recommend that the general manager:

3.A Certify and accredit all major applications and the general support system every 3 years or when major changes occur. As part of this process, we recommend that DNFSB ensure that each of the following components recommended in NIST SP 800-37, Guidelines for the Security Certification and Accreditation of Federal Information Technology Systems, is addressed:

- Conduct and document independent risk assessments. (1)
- Classify information systems according to their criticality and sensitivity. (8)
- Implement adequate physical and logical controls to prevent or detect unauthorized access based on risk assessments. (10)
- Document a security plan that covers all major facilities and operations, has been approved by key affected parties, and covers the topics prescribed by OMB Circular A-130 and NIST SP 800-18 for general support systems. (3)
- Develop a security management structure that clearly assigns security responsibilities, including rules of behavior for all users of DNFSB's information resources. (4)
- Ensure that system owners authorize major systems for use. (2)

3.B Document a computer incident response plan that monitors system access, investigates apparent security violations, and takes appropriate remedial actions. (5)

3.C Define key IT personnel. Develop appropriate security-related personnel policies regarding job rotation or mandatory vacation for key IT personnel. (6)

3.D Ensure that vulnerabilities and control weaknesses identified during audits and the certification and accreditation process receive prompt corrective action. Ensure that significant deficiencies are tracked on the Plan of Action and Milestones (POA&M) list, and that management actively monitors the status of open items. (7)

3.E Maintain a list of authorized system users for the GSS and their authorized levels of access. Develop a process to review accounts and access levels on a regular basis. (9)

3.F Create an SDLC methodology that provides a structured approach consistent with generally accepted concepts and practices. (11) Include the following controls in the SDLC document:

- Require documented authorization for system processing features and program/configuration modifications. (12)
- Require adequate testing procedures for new and revised software. (13)
- Require authorization and testing controls for changes to system software. (16)

3.G Improve logical controls that limit access to system software and develop a risk-based plan to monitor system software use. (14 and 15)

3.H Document policies and procedures for segregating incompatible duties related to system administration and support functions. Include restrictions on key positions in documented job descriptions for IT personnel. (17 and 19)

3.I Document daily operating procedures for the data center, and specify acceptable and unacceptable rules of behavior. (18)

3.J Enhance physical and logical controls that prevent and minimize potential system damage and service interruptions. Specifically, address risks associated with back-up procedures and environmental controls over the server room. (20)

Thank you for allowing us to review and respond to the draft "Independent Auditor's Report on Compliance with Laws and Regulations issued by Cotton & Company LLP".

In the Independent Audit Report on Internal Control three reportable conditions are listed with the first two considered as material weaknesses. The three are: Accounting for Property and Equipment, Financial Reporting, and Information Systems. As we discussed, GSA is responding only to the weakness identified under the Financial Reporting.

1. Accounting for Property & Equipment - DNFSB will respond to this item.

2. Financial Reporting -

We disagree with the statement that GSA, DNFSB's external accounting services provider, did not have sufficient accounting procedures to ensure that transactions processed and financial statements prepared for DNFSB were complete and accurate and in compliance with applicable laws and regulations.

GSA's fiscal year 2004 audit was performed by the external auditors, PricewaterhouseCoopers, and no material weaknesses were presented in GSA's fiscal year 2004 audit report. GSA evaluates its financial systems every year for compliance with federal rules and regulations. GSA's 2004 Annual Performance and Accountability Report can be viewed at www.gsa.gov, under the Office of the Chief Financial Officer page, reference Budget Planning and Financial Reports.

Our responses for items listed under Financial Reporting are below:

A. Journal voucher entries prepared by GSA accountants did not require review and approval by supervisory accountants before posting to the Pegasys general ledger.

Response: GSA has determined that due to the volume of journal vouchers processed during the fiscal year in Pegasys, it is cost prohibitive to have a supervisor review and approve each manual transaction for the client agencies. The risk involved is not sufficient to warrant a change in this procedure.

B. GSA accountants recorded material "worksheet entries" ($22 million for June 30, 2004, reporting) outside of Pegasys to compensate for transactions that did not post in accordance with United States Standard General Ledger (SGL) criteria when preparing the combined statement of budgetary resources.

Response: GSA has identified certain posting models in Pegasys which need to be changed. GSA is in the process of reviewing all posting models related to budgetary entries.

The "worksheet entries" described above were recorded to ensure all material amounts are reported correctly on the financial statements per Generally Accepted Accounting Principle's (GAAP).

C. GSA lacked adequate segregation of duties for establishing vendors in Pegasys. The same technician could both create/modify and approve vendor information in the system.

Response: GSA has several technicians responsible for creating and modifying vendor numbers. These technicians do not have system access or authority to process payment transactions.

GSA does a daily statistical sampling of payments to ensure that payment information, including vendor name and address is accurate. Each payment processed by GSA External Services technicians is reviewed by another GSA technician to ensure the vendor name, address and invoice information is correct, prior to disbursement.

D. GSA incorrectly recorded invoice receipt and acceptance dates in Pegasys for 38 of 72 sampled vendor payments during fiscal year 2004, resulting in late payments to vendors. GSA did not pay interest penalties to vendors, as mandated by the Prompt Payment Act, for these late payments.

Response: GSA forwarded approximately 265 invoice copies to the auditors as requested. The audit report references 72 sampled vendor payments. GSA was not provided with detailed information as to which 72 invoices they are referencing. However, the auditors did forward a sample of 36 invoices for review. When examined, we found 17 invoices were paid late and should have generated interest. The total amount of interest which should have paid on the 17 invoices was $726.98. This is just slightly over one tenth of one percent (.13%) of the value of invoices paid late. The amount of interest not paid to vendors on these invoices is not material. The specific invoice examples were isolated to an associate who is no longer with GSA. Based on this finding, however, Prompt Payment Act training will be provided to all External Services Accounts Payable associates.

E. GSA did not prepare required supplementary information, Intergovernmental Assets and Liabilities, for DNFSB's financial statements, as required by OMB Bulletin 01-09, Form and Content of Agency Financial Statements. This disclosure was not included in the final financial statements.

Response: GSA did not prepare the supplementary information because DNFSB did not contract with GSA to provide this information for the fiscal year 2004 financial statements. GSA and DNFSB have agreed that GSA will prepare the required supplementary information for the fiscal year 2005 financial statements.

F. We could not gain assurance that amounts presented as Intragovermental Accounts Payable and Accounts Payable with the Public valued at $271,000 and $474,000, respectively, on the consolidated balance sheet were reasonable. During testing, we identified several payables relating to accounting entries processed in prior fiscal years that appeared invalid. DNFSB's agreed that these items appeared invalid, but its representatives stated that it did not have time to assess the validity of material payables outstanding as of September 30, 2004.

Response: GSA will coordinate an Open Items review process with DNFSB during fiscal year 2005. DNFSB has agreed to validate all Open Items during fiscal year 2005.

G. GSA did not adequately reconcile fund balance activity, resulting in $67,000 in unsupported general ledger adjustments to DNFSB's accounting records. In addition, GSA reported $2.3 million in "plug" transactions to Treasury during September in an effort to reduce its differences reported by Treasury on the Statement of Differences.

Response: GSA did reconcile the Statement of Differences for September and identified every difference that made up the $2.3 million. The $2.3 million was GSA's Supplemental SF224 for these differences, not a "plug" transaction to reduce its differences with Treasury. The auditors have been provided the reconciliation of the $2.3 million that addressed the differences. It should be noted that none of the $2.3 million directly related to DNFSB. The entire balance related to other GSA funds or clients reported under ALC 47000016.

H. GSA placed transactions with a net value of $2.4 million and an absolute value of $14.5 million in a GSA clearing account as of September 30, 2004. It did not, however, have sufficient control to identify which transactions applied to DNFSB, and thus we could not determine if DNFSB's accounting transactions and resulting financial statement line items were materially complete.

Response: GSA provided the auditors the breakout for DFNSB's clearing account. The breakout included 2 items with a net value of $951.51 and absolute value of $1,202.67. GSA has sufficient controls in place to identify the items in the clearing account. Again, only $951.51 of the $14.5 million directly related to DNFSB. The remaining balances related to other GSA funds or clients reported under ALC 47000016.

I. Components of the consolidated balance sheet line item Net Position, Unexpended Appropriations and Cumulative Results of Operations were understated by $7.4 million. This occurred because GSA historically closed cumulative results (net of expenses, revenues, and appropriations used) into Unexpended Appropriations. GSA corrected this error when brought to its attention.

Response: This out-of-balance condition was caused by the conversion from GSA's previous accounting system (NEAR) which used an internal general ledger system to GSA's new accounting system (Pegasys) that is built around the Federal Government's Standard General Ledger. This is a one-time problem that occurred during the conversion at the beginning of fiscal year 2003. Pegasys uses the Standard General Ledger accounts (Net of expenses and revenues, and appropriations) which close to Cumulative Results of Operations and Unexpended Appropriations, respectively.

Auditors Recommendations

They recommend that the general manager:

2.A Determine if DNFSB has adequate and qualified resources to review GSA-prepared accounting transactions and financial statements.

Response: GSA is available to work with a DNFSB representative on this item.

2.B Modify DNFSB's contract with GSA to require accounting services that comply with significant provisions of the Federal Financial Management Improvement Act and adhere to internal control requirements detailed in GAO's Standards of Internal Control in the Federal Government, including proper segregation of duties. If GSA cannot provide accounting services in accordance with the noted criteria, then DNFSB should consider contracting with another external service provider.

Response: GSA can provide the above mentioned accounting services.

2.C Coordinate with GSA to develop a detailed financial reporting plan for fiscal year 2005, including milestone dates and task assignments.

Response: GSA looks forward to working with DNFSB on their reporting requirements.

2.D Review outstanding accounts payable as of September 30, 2004; determine validity; prepare adjusting entries as necessary; and ensure that a concise audit trail is maintained.

Response: GSA will coordinate an Open Items review process with DNFSB in fiscal year 2005. DNFSB has agreed to validate Open Items during fiscal year 2005.

3. Information Systems - DNFSB will respond to this item.

PRINCIPAL STATEMENTS

For the years ending September 30, 2004, and 2003

Limitations of the Financial Statements

The principal financial statements have been prepared by the GSA Heartland Finance Center on behalf of the DNFSB to report the financial position and results of operations of the DNFSB, pursuant to the requirements of 31 U.S.C. 3515 (b).

While the statements and accompanying footnotes have been prepared from the books and records of the DNFSB in accordance with generally accepted accounting principles (GAAP) for Federal entities and the formats prescribed by OMB, the statements are in addition to the financial reports used to monitor and control budgetary resources which are prepared from the same books and records. The statements should be read with the realization that they are for a component of the U.S. Government, a sovereign entity.

The DNFSB's FY 2004 financial statements were audited by Cotton and Company, LLP under contract to the DNFSB. Due to auditing procedure scope limitations and issues discussed in the preceding pages of this report, Cotton and Company was not able to express an opinion on these financial statements.

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

BALANCE SHEET

As Of September 30, 2004 and 2003

		2004	2003
Assets:			
Intragovernmental:			
Fund Balance With Treasury	(Note 2)	$ 5,949,812	$ 7,439,570
Total Intragovernmental		5,949,812	7,439,570
Accounts Receivable, net	(Note 3)	12,403	
Other		13,000	
General Property, Plant and Equipment	(Note 4)	176,948	219,222
Total Assets		$ 6,152,163	$ 7,658,792
Liabilities:	(Note 5)		
Intragovernmental:			
Accounts Payable		$ 270,904	$ 161,350
Total Intragovernmental		270,904	161,350
Accounts Payable		473,939	520,353
Other	(Note 6)		340,224
Accrued Funded Payroll and Leave		451,865	
Unfunded Leave		812,224	
Total Liabilities		2,008,932	1,021,927
Net Position:			
Unexpended Appropriations		4,753,104	6,423,281
Cumulative Results of Operations		(609,873)	213,584
Total Net Position		4,143,231	6,636,866
Total Liabilities and Net Position		$ 6,152,163	$ 7,658,792

The accompanying notes are an integral part of these statements.

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

STATEMENT OF NET COST

For The Years Ended September 30, 2004 and 2003

	2004	2003
Program Costs:		
Intragovernmental Gross Costs	$ 2,693,321	$ 736,048
Intragovernmental Net Costs	2,693,321	736,048
Gross Costs with the Public	19,243,029	18,689,446
Net Costs with the Public	19,243,029	18,689,446
Total Program Cost	21,936,350	19,425,495
Net Cost of Operations	$ 21,936,350	$ 19,425,495

The accompanying notes are an integral part of these statements.

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

STATEMENT OF CHANGES IN NET POSITION

For The Years Ended September 30, 2004 and 2003

	2004 Cumulative Results Of Operations	2004 Unexpended Appropriations	2003 Cumulative Results Of Operations	2003 Unexpended Appropriations
Beginning Balances	$ 213,584	$ 6,423,281	$ 277,814	$ 7,374,435
Prior Period Adjustment	(886)		(466,388) *1	
Beginning Balances as Adjusted	$ 212,698	$ 6,423,281	$ (188,574)	$ 7,374,435
Budgetary Financing Sources;				
Appropriations Received		19,559,000		19,000,000
Other Adjustments (rescissions, etc) (+/-)		(115,398)		(123,500)
Appropriations Used	21,113,779	(21,113,779)	19,827,653	(19,827,653)
Total Financing Sources	21,113,779	(1,670,177)	19,827,653	(951,153)
Net Cost of Operations (+/-)	21,936,350		19,425,495	
Ending Balances	$ (609,873)	$ 4,753,104	$ 213,584	$ 6,423,281

The accompanying notes are an integral part of these statements.

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

STATEMENT OF BUDGETARY RESOURCES

For The Years Ended September 30, 2004 and 2003

		2004 Budgetary	2004 Non-Budgetary Credit Program Financing Accounts	2003 Budgetary	2003 Non-Budgetary Credit Program Financing Accounts
Budgetary Resources:					
Budget Authority:					
Appropriations Received		$ 19,559,000	$	$ 19,000,000	$
Unobligated Balance:					
Beginning of Period		2,477,974		2,929,924	
Spending Authority from Offsetting Collections:					
Earned					
Collected		3,571		74,698	
Subtotal		22,040,545		21,929,924	
Recoveries of Prior Year Obligations		917,500		628,438	
Permanently Not Available		(115,398)		(123,500)	
Total Budgetary Resources		$ 22,842,647	$	$ 22,434,862	$
Status of Budgetary Resources					
Obligations Incurred					
Direct	(Note 7)	21,860,307	$	$ 19,956,888	$
Unobligated Balances					
Apportioned		982,341		2,477,974	
Total Status of Budgetary Resources		$ 22,842,647	$	$ 22,434,862	$
Relationship of Obligations to Outlays:					
Obligated Balance, Net, Beginning of Period		4,961,596		5,238,278	
Obligated Balance, Net, End of Period:					
Undelivered Orders		3,770,764		3,945,307	
Accounts Payable		1,196,708		1,016,289	
Outlays:					
Disbursements		20,936,931		19,679,830	
Collections		(3,571)		(74,698)	
Subtotal		20,933,360		19,605,132	
Net Outlays		$ 20,933,360	$	$ 19,605,132	$

The accompanying notes are an integral part of these statements.

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

STATEMENT OF FINANCING

For The Years Ended September 30, 2004 and 2003

		2004	2003
Resources Used to Finance Activities:			
Budgetary Resources Obligated			
Obligations Incurred		$ 21,860,307	$ 19,956,888
Less: Spending Authority from Offsetting Collections and Recoveries		(921,071)	(628,438)
Net Obligations		20,939,236	19,328,450
Total Resources Used to Finance Activities		20,939,236	19,328,450
Resources Used to Finance Items not Part of the Net Cost of Operations			
Change in Budgetary Resources Obligated for Goods			
Services and Benefits Ordered But Not Yet Provided (+/-)		161,044	506,773
Resources that finance the acquisition of assets or liquidation of liabilities (+/-)		(79,197)	(80,286)
Other resources or adjust. to net obligated resources that do not affect net cost of operations (+/-)		(7,287)	(466,388)
Total Resources Used to Finance the Net Cost of Operations		21,013,796	19,288,549
Components of the Net Cost of Operations that will not Require or Generate Resources in the Current Period:			
Components Requiring or Generating Resources in Future Periods:			
Increase in exchange revenue receivable from the public		(5,638)	
Revaluation of Assets or liabilities (+/-)		109,167	136,926
Depreciation and amortization		6,800	
Increase in Annual Leave Liability	(Note 8)	812,224	
Net Cost of Operations		$ 21,936,350	$ 19,425,475

The accompanying notes are an integral part of these statements.

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

APPROPRIATED FUND

Note 1 – Significant Accounting Policies

Reporting Entity

The Defense Nuclear Facilities Safety Board's mandate under the Atomic Energy Act is to provide safety oversight of the nuclear weapons complex operated by the Department of Energy (DOE).

Basis of Presentation

These financial statements have been prepared from the accounting records of The Defense Nuclear Facilities Safety Board in accordance with generally accepted accounting principles (GAAP) as promulgated by the Federal Accounting Standards Advisory Board (FASAB), and OMB (Office of Management and Budget) Bulletin 01-09, "Form and Content of Agency Financial Statements." GAAP for Federal entities is the Hierarchy of accounting principles prescribed in the American Institute of Certified Public Accountant's (AICPA) Statement on Auditing Standards No. 91, *Federal GAAP Hierarchy*.

OMB Bulletin No. 01-09 requires agencies to prepare principal statements, which include a Balance Sheet, a Statement of Net Cost, a Statement of Changes in Net Position, a Statement of Budgetary Resources and a Statement of Financing. The balance sheet presents, as of September 30, 2004, amounts of future economic benefits owned or managed by The Defense Nuclear Facilities Safety Board (assets), amounts owed by The Defense Nuclear Facilities Safety Board (liabilities), and amounts, which comprise the difference (net position). The Statement of Net Cost reports the full cost of the program, both direct and indirect costs of the output, and the costs of identifiable supporting services provided by other segments within The Defense Nuclear Facilities Safety Board and other reporting entities. The Statement of Budgetary Resources reports an agency's budgetary activity, while the Statement of Financing reconciles budgetary resources to the agency's net cost of operations.

Basis of Accounting

Transactions are recorded on the accrual accounting basis in accordance with OMB Bulletin No. 01-09. Under the accrual basis of accounting, revenues are recognized when earned, and expenses are recognized when a liability is incurred, without regard to receipt or payment of cash. The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results may differ from those estimates.

Revenues and Other Financing Sources

The Defense Nuclear Facilities Safety Board is an appropriated fund. This fund is a revolving fund and receives appropriation on a yearly basis. The Defense Nuclear Facilities Safety Board has no other financing sources.

Note 2 – Fund Balance With Treasury

All of The Defense Nuclear Facilities Safety Board fund balance with treasury is coming from appropriations. Worksheet adjustments were made for two items to bring the trial balance cash account into balance with Treasury. The first was a credit of $60 for a payroll charge that was reflected in the Treasury cash balance, but was not in the GSA accounting system. The second was a debit of $451,752 for a payroll accrual that was incorrectly booked to cash, resulting in the cash balance being understated.

	2004	2003
A. Fund Balance with Treasury		
Appropriated Fund	$5,949,812	$7,439,570
B. Status of Fund Balance with Treasury		
1) Unobligated Balance Available	982,341	2,477,974
2) Obligated Balance not yet Disbursed	4,967,471	4,961,596
Total	$5,949,812	$7,439,570

Note 3 – Accounts Receivable, Net

The line item represents the Account Receivable Claims from Associates. It is showing a debit balance therefore, associates claims need to be disbursed to clear this account. The direct write-off method is used for uncollectible receivables.

Accounts Receivable	2004	2003
Claims - Associates	$12,403	$ 0

Note 4 - General Property, Plant and Equipment, Net

As of September 30, 2004 the Defense Nuclear Facilities Safety Board shows Equipment – Administrative total cost of $697,651 and a net book value of $176,948. The Accumulated Depreciation to date shows a balance of $520,703. The depreciation calculation method used is Straight Line with a useful life of 5 years. A $5,000 threshold is used to determine whether items are capitalized.

2004	Equipment	Furniture & Fixtures	Software	Total
Cost	$623,120	$52,644	$21,887	$697,651
Accum. Depr.	(489,036)	(24,017)	(7,650)	(520,703)
Net book value	$134,084	$28,627	$14,237	$176,948

2003	Equipment	Furniture & Fixtures	Software	Total
Cost	$1,594,854	$53,210	$19,938	$1,668,002
Accum. Depr.	(1,423,292)	(16,950)	(8,538)	(1,448,780)
Net book value	$ 171,562	$36,260	$11,400	$ 219,222

Note 5 – Liabilities Not Covered by Budgetary Resources

Liabilities of DNFSB are classified as liabilities covered or not covered by budgetary resources. As of September 30, 2004, DNFSB showed liabilities covered by budgetary resources of $1,196,708 and liabilities not covered by budgetary resources of $812,224.

Liabilities covered by budgetary resources is composed of Accounts Payable $744,843 and Accrued Funded Payroll and Leave $451,865.

With the Public	2004	2003
Other (Unfunded leave liability)	$812,224	*2
Total liabilities not covered by budgetary resources	812,224	*2
Total liabilities covered by budgetary resources	1,196,708	1,021,927
Total liabilities	$2,008,932	$1,021,927

Note 6 – Other Liabilities

Other liabilities with the public consist of Accrued Funded Payroll and Leave of $451,865 and Unfunded leave in the amount of $812,224.

	With the Public	Non-Current	Current	Total
2004	Other Liabilities	$812,224	$451,865	$1,264,089
2003	Other Liabilities	*2	$340,224	$340,224

Note 7 – Apportionment Categories of Obligations Incurred

All obligations for the Defense Nuclear Facilities Safety Board, is the amount of direct obligations incurred against amounts apportioned under category A on the latest SF 132.

Direct	2004	2003
Category A	$21,860,307	$19,956,888

Note 8 – Explanation of the Relationship Between Liabilities Not Covered by Budgetary Resources on the Balance Sheet and the Change in Components Requiring or Generating Resources in Future Periods

Liabilities not covered by budgetary resources total $812,224 and the Change in components requiring or generating resources in future period shows $812,224. If there were a difference, it would be the net increase in Annual Leave Liability. Accrued funded payroll liability is covered by budgetary resources and is included in the net cost of operations. Whereas, the unfunded leave liability includes the expense related to the increase in annual leave liability for which the budgetary resources will be provided in a subsequent period.

	2004	2003
Liabilities not covered by budgetary resources	$812,224	*2
Change in components requiring/generating resources	$812,224	*2

*1 – Prior period adjustment made for FY02 payroll that NFC processed and hit treasury on 9/30/02, but GSA did not receive the documentation until FY03 at which time it was booked into the system. An adjustment was made in FY02 on paper so that reporting would agree with treasury causing the FY02 ending SGL balances brought forward to be overstated since the payroll wasn't booked into the system and reflected on the SGL until FY03.

*2 – These figures (Unfunded Leave & Future Funded Expenses – Leave) were not provided by the National Finance Center to GSA in order to be reflected on the statements and in the accompanying notes.

APPENDIX A: Actual Performance Results for Prior Fiscal Years

The DNFSB revised its strategic plan in 2003 to refocus its efforts and better align its resources to meet the challenges of ensuring safety in the defense nuclear complex as the complex evolves during the latter half of this decade. Previous performance reports were established and executed to achieve the objectives of the earlier version of the DNFSB's strategic plan. The changes to the plan are evolutionary in nature and primarily result in increased DNFSB attention on ensuring safety in the area of nuclear facility design and infrastructure issues while maintaining vigilance in the areas of nuclear weapons and nuclear materials. The performance objectives from previous years were written to support objectives in only three areas. Rather than being a separate strategic area of concentration, safety oversight of the design and construction of new defense nuclear facilities were captured as part of a broad strategic area of concentration.

Detailed information demonstrating the DNFSB's performance relative to its Strategic Plan and its Annual Performance Plans for the fiscal years 2001-2003 is available in previous year Performance Reports published on the DNFSB's website at *www.dnfsb.gov*. The tables that follow provide abbreviated summaries and information concerning the DNFSB's actual performance in FY 2001, FY 2002, and FY 2003.

GOAL 1 — Complex-Wide Health and Safety Issues

Objective 1–A:	**Improvement and Integration of Health and Safety Directives.** The DNFSB and its staff will verify that new and revised DOE directives contain adequate requirements for the protection of the health and safety of the workers and the public.

Examples of FY 2001 Accomplishments

Nuclear Safety Rule. The "Nuclear Safety Rule" (10 CFR 830, *Nuclear Safety Management*) was issued in November 2000 after extensive review and comment by the DNFSB. A set of associated implementation guides issued by DOE shortly thereafter incorporated significant improvements suggested by the DNFSB in the selection of technical safety requirements (TSRs) and the identification of safety systems. These changes provide improved guidance to DOE contractors aimed at enhancing the safety of defense nuclear facilities through better identification and maintenance of safety controls.

Safety of Nuclear Explosive Operations. The DNFSB made significant safety improvements to the DOE Orders associated with the safety of operations involving nuclear explosives: DOE Order 452.1B, *Nuclear Explosive and Weapon Surety Program*; and DOE Order 452.2B, *Safety of Nuclear Explosive Operations*.

Safety Management Functions, Responsibilities, and Authorities Manual. The DNFSB provided specific suggestions for improvements to DOE Manual 411.1-1B, *Safety Management Functions, Responsibilities, and Authorities Manual.* These improvements strengthened the role of the DOE Office of Environment, Safety, and Health (EH). For example, the DNFSB urged that EH be given the responsibility for approving alternative methodologies for safety analyses by DOE contractors when used instead of the "safe harbor" approaches provided in 10 CFR 830, *Nuclear Safety Management.*

Examples of FY 2002 Accomplishments

Natural Phenomena Hazards. The DNFSB worked closely with DOE to revise criteria for design and evaluation of DOE facilities to withstand natural phenomena hazards such as earthquakes, storms, and floods. This effort culminated in an updated standard that meets the requirements of current building codes and industry standards.

Software Quality Assurance. The DNFSB reviewed a new draft DOE Order, O-203.X, *Software Quality Assurance,* and suggested significant safety improvements. As a result of the DNFSB's effort, DOE improved its understanding of the importance of software quality assurance to nuclear safety.

Facility Representative Program. The DNFSB reviewed the qualification standard for DOE Facility Representatives (TRNG-0019, *Facility Representative Functional Area Qualification Standard*). As a result of the DNFSB's efforts, this key standard was strengthened and issued expeditiously in April 2002.

Examples of FY 2003 Accomplishments

Worker Protection Management. The DNFSB worked closely with DOE to revise the requirements in Change 1 to DOE Order 440.1A, *Worker Protection Management for DOE Federal and Contractor Employees*. As a result, DOE issued an updated directive that included important new biological agent protection requirements developed in response to increased homeland security awareness.

Electrical Safety. The DNFSB has urged DOE to take a proactive stance to ensure adequate electrical safety. In July 2003, the DNFSB informed DOE that the proposed revision of its *Electrical Safety Handbook* deleted much of the important technical content. In response, DOE restored important electrical safety guidance such as standards for grounding and bonding of electrical installations and electrical preventive maintenance.

Unreviewed Safety Question (USQ) Procedures. The USQ process required by 10 CFR 830.203 is the mechanism for ensuring that the safety basis for a nuclear facility is not invalidated by undocumented or unauthorized changes. In 2003, the DNFSB reviewed seven USQ procedures and identified significant deviations from the governing requirements. DOE subsequently required substantial revisions to the procedures. Changes to important safety documents and safety controls, which previously could have been made unilaterally by the contractors, now require DOE approval.

GOAL 1 — Complex-Wide Health and Safety Issues

Objective 1–B:	**Technical Competence.** The DNFSB and its staff will verify that roles, responsibilities, experience, and competencies required to protect the workers and the public are explicitly defined and implemented for both DOE and its contractor personnel.

Examples of FY 2001 Accomplishments

Fissile Material Handlers. The DNFSB identified deficiencies in Y-12's program for certification of fissile material handlers and in controlling the actions of workers who had not completed their qualifications/certifications. As a result, Y-12 reinstated proper controls over these workers, who subsequently completed their nuclear safety training requirements and obtained certification prior to resuming operations.

Project Management/Engineering. The DNFSB identified a lack of qualified and experienced Federal personnel capable of managing design and construction of nuclear projects at LANL and Y-12. The DNFSB also found that DOE's project engineering review process was inadequate to identify issues with quality assurance and safety implications. In response, NNSA implemented a corrective plan to ensure that safety is integrated in the design and construction of nuclear projects.

System Engineers. The DNFSB urged DOE to develop formal training and qualification requirements for both federal and contractor system engineers in response to DNFSB Recommendation 2000-2, *Configuration Management, Vital Safety Systems*. As a result, DOE drafted a significant modification to DOE Order 420.1, *Facility Safety*, defining responsibilities and training requirements for contractor system engineers.

Examples of FY 2002 Accomplishments

Federal Technical Oversight of Safety Systems. In DNFSB Recommendation 2000-2, *Configuration Management, Vital Safety Systems,* the DNFSB urged DOE to identify Federal expertise needed to ensure effective oversight of contractor safety systems. In response, DOE identified 31 additional personnel needed for this important function, and identified critical technical skill gaps in the areas of mechanical engineering, fire protection, electrical engineering, instrumentation and control, and nuclear criticality. DOE subsequently took action to recruit, train and qualify Federal employees for oversight of the vital safety systems.

Human Factors Engineering. The DNFSB's review of the use of human factors engineering principles at Y-12 identified a high reliance on administrative controls in lieu of engineered fire protection features. The DNFSB communicated specific concerns to DOE related to the use of administrative controls. As a result of the DNFSB's effort, DOE is now working to improve its understanding and use of administrative controls.

Contractor Training and Qualification. The DNFSB reviewed the Waste Examination Facility (WEF) at the Nevada Test Site to assess its readiness to begin operations as a Hazard Category 3 nuclear facility. The DNFSB noted that the training and qualification program was not adequate to meet the requirements of nuclear facilities as addressed in 10 CFR Part 830, *Nuclear Safety Management.* DOE subsequently improved nuclear operations at the WEF.

Examples of FY 2003 Accomplishments

Technical Qualifications of DOE Personnel. During 2003, the DNFSB provided extensive feedback on 16 new/revised Functional Area Qualification Standards. In response, DOE issued specific guidance to improve the technical qualifications of DOE personnel in areas such as electrical safety, radiation protection, and nuclear explosive safety.

Training and Qualification of NNSA Contractor Personnel. The DNFSB found that the Pantex Plant was not fulfilling safety-related training requirements and requested that NNSA determine whether adequate assessments were being performed across the complex. Therefore, NNSA developed a number of corrective actions for Pantex to improve safety-related training of operators, such as nuclear weapon production technicians, and has begun to plan training reviews at the remaining NNSA sites.

System Engineers and Federal Subject Matter Experts. In Recommendation 2000-2, *Configuration Management, Vital Safety Systems*, the DNFSB urged DOE to develop requirements for training and qualification of subject matter experts in vital safety systems ("system engineers"). In 2003, the DNFSB determined that the effectiveness of site contractors' systems engineer programs varied significantly. Also, the staffing of Federal and contractor positions for subject matter experts and systems engineers was incomplete, and qualification programs were inadequately enforced. DOE has now filled vacant, vital technical positions, and focused senior management attention and resources on this effort.

GOAL 1 — Complex-Wide Health and Safety Issues

Objective 1–C:	Complex-Wide Implementation of Integrated Safety Management in Facility Design, Construction, Operation, and Post-Operation. The DNFSB and its staff will verify the effective and expeditious development and implementation of DOE's Integrated Safety Management (ISM) program.

Examples of FY 2001 Accomplishments

Analysis Methodology. Several DOE contractors requested to use a methodology for identifying safety-class and safety-significant structures, systems and components, that was inappropriate compared to the approved process in DOE-STD-3009-94, *Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Safety Analysis Reports*. The DNFSB discouraged use of this alternate methodology. DOE agreed with the DNFSB's position and prohibited use of this alternate methodology.

Recommendation 2000-2. DNFSB Recommendation 2000-2, *Configuration Management, Vital Safety Systems*, called on DOE to address the degrading condition of safety systems. In response, DOE conducted detailed reviews of confinement ventilation systems at two facilities and identified safety issues to be corrected.

Examples of FY 2002 Accomplishments

Maintenance Programs. At the Hanford Site, a review of the maintenance program at the Spent Nuclear Fuel Project program identified weaknesses that threatened to delay the schedule for removing the fuel from the reactor basins. Similarly, at Y-12, reviews of the maintenance program identified programmatic weaknesses which significantly impaired the effectiveness of the program. In response, DOE improved activities, which has strengthened both programs.

Emergency Power. At LLNL, a review of the emergency power system in Building 332 disclosed a lack of understanding of system vulnerabilities. In response, the contractor made design and equipment changes that significantly increased the reliability of the system.

Highly Enriched Uranium Materials Facility at Y-12. The DNFSB's review of the HEUMF design concluded that additional work was needed to accurately document the design bases and to specify the general design criteria and specific requirements for safety class systems. In response, DOE made immediate safety improvements to the building foundation design and changed the general design criteria to more adequately capture the appropriate codes and standards.

GOAL 2 — Safe Stewardship of Nuclear Weapons Stockpile and Components

Objective 2–A:	Safe Conduct of Stockpile Management. The DNFSB and its staff will verify the safety of DOE's defense nuclear facilities and activities relating to the maintenance, storage, and dismantlement of the nuclear weapon stockpile.

Examples of FY 2001 Accomplishments

Startup of a new Dismantlement Activity at Y-12. The DNFSB identified a number of potentially significant safety issues with the design of a new weapon (secondary) dismantlement process. In response to the DNFSB's concerns, DOE and its contractor redesigned the process to resolve the safety issues.

Restart of the Reduction Process at Y-12. The DNFSB highlighted safety issues related to the design of the reduction process and noted the lack of resolution of safety issues since the failed attempt in November 1999 to restart the reduction process. In response, Y-12 developed an adequate technical basis for the process and successfully restarted the operation.

Material Storage Facilities at Y-12. The DNFSB expressed concern about the degrading physical condition of facilities at Y-12 used to store nuclear material. The DNFSB emphasized its concern that the facilities and containers that store these nuclear materials should provide adequate protection and ensure the health and safety of the workers, the public, and the environment. As a result, material stored in a decrepit building has been transferred to better storage facilities and fire hazards have been substantially reduced.

Lightning Protection at Pantex. During 2001, DOE proposed to relax certain lightning protection controls at Pantex, over the objections of both the design agencies and DOE's Nuclear Explosive Safety Study Group. The DNFSB intervened to emphasize the need for DOE to maintain technically justified controls for all nuclear explosive operations. As a result, DOE retained the controls and the Pantex lightning protection program continues to provide a reduced lightning threat environment with regard to nuclear explosive operations.

Examples of FY 2002 Accomplishments

Fire Protection in B-1 Wing at Y-12. Proposed upgrades to the fire protection program supporting the wet chemistry area consisted of minor plant improvements and nearly three dozen administrative controls. The DNFSB noted significant problems with maintaining administrative controls at Y-12, and identified inconsistencies in the safety basis supporting this operation. In response, NNSA made fire safety improvements including installation of a fixed fire suppression system.

Maintenance Improvement at Y-12. In 2001, Y-12 responded to DNFSB concerns that overdue and deferred maintenance was undermining the reliability of safety systems by implementing a maintenance improvement program. In 2002, the DNFSB found that the program did not incorporate certain fundamental requirements, such as integrated scheduling of maintenance and comprehensive tracking of material history and equipment failures. Y-12 responded by instituting systematic, scheduled outages at nuclear facilities, while prioritizing and reducing the maintenance backlog.

Material Storage Facilities at Y-12. The DNFSB highlighted the accumulation of unneeded nuclear materials stored in unsatisfactory configurations at Y-12. During 2002, Y-12 stabilized or disposed of many of the materials, particularly Non-Material Access Area legacy items and the highly enriched uranium inventory in Building 9206.

Recommendation 99-1. Continuing to respond to DNFSB Recommendation 99-1, *Safe Storage of Fissionable Material called "Pits,"* DOE repackaged its 5000th pit into a robust container suitable for interim storage 2002.

Examples of FY 2003 Accomplishments

Nuclear Explosive Safety at Pantex. For several years, the DNFSB has urged DOE to simplify and expedite its re-engineering of nuclear explosive operations at Pantex. In 2003, DOE completed the start-up of the improved process for W62 Disassembly and Inspection Program and the W88 Bay operations. Tooling, equipment, and processes have been improved so that operations involving nuclear explosives at Pantex are significantly safer.

Highly Enriched Uranium Processing Fire Protection. The DNFSB questioned the adequacy of the fire safety provided by the sprinkler system in the building for enriched uranium operations at Y-12. In response, NNSA evaluated the existing sprinkler system against modern requirements and agreed that action was required to resolve the safety issue. NNSA has taken steps to reduce the likelihood of a fire and started a project to upgrade fire protection that includes providing a fire sprinkler system to parts of the building.

Plutonium Pit Repackaging. In response to Recommendation 99-1, DOE has repackaged more than 8,600 pits at the Pantex Plant into sturdy containers suitable for interim storage. The associated container surveillance program has also been rejuvenated; the surveillance backlog was eliminated by the end of 2003. The potential for an accidental plutonium release has been reduced because pits are being stored in an improved and safer configuration.

GOAL 2 — Safe Stewardship of Nuclear Weapons Stockpile and Components

Objective 2–B:	Safe Conduct of Stockpile Stewardship. The DNFSB and its staff will verify the safety of DOE's defense nuclear activities undertaken to ensure the continuing effectiveness of the nuclear weapon stockpile in the absence of underground nuclear testing.

Examples of FY 2001 Accomplishments

Safety Management at NTS. DOE efforts at NTS in response to Recommendation 95-2 have significantly improved the safety and DOE's oversight of activities. As a result of DNFSB interactions, work planning, authorization, and control have improved and the DOE facility representative program is developing into an asset for DOE and its contractors.

LANL Special Recovery Line (SRL). The DNFSB noted that the SRL represents the only disposition path for a subset of relatively vulnerable pits currently stored at the Pantex Plant. A lack of funding for SRL had nearly resulted in operations being placed into a cold standby mode. The DNFSB stressed that it would be prudent to stabilize funding for SRL to maintain the ability to dispose of vulnerable pits at Pantex should an acute problem arise there. NNSA has now agreed to maintain the availability of SRL.

Fire Protection at LLNL. The DNFSB identified that a building fire alarm system is inadequately designated and maintained to ensure power and control for the room smoke detectors and fire dampers. In response, LLNL acknowledged that the problem increased the probability of malfunction of equipment important to safety and implemented compensatory measures to increase reliability of the fire alarm system. LLNL is also expediting replacement of the old system with a new safety-class system.

Examples of FY 2002 Accomplishments

Plutonium-238 Scrap Recovery Line at LANL. LANL was proceeding toward initial operation of the plutonium-238 scrap recovery line by the end of FY 2002. The DNFSB noted that the project had not fully characterized and developed controls to address the hazards associated with this operation. DOE and LANL took actions to resolve the issues and improve the safety of the scrap recovery line.

Emergency Power System at the LLNL Plutonium Facility. In April 2002, the DNFSB identified deficiencies in LLNL's emergency electrical power system, which did not meet safety-class standards and IEEE codes. As a result of the DNFSB's efforts, LLNL corrected the deficiencies.

Deactivation LLNL Heavy Element Facility. The DNFSB reviewed plans for deactivation of the Heavy Element Facility, including the removal of nearly 300 radioactive items, some of which pose significant radiological risk. Planning for the project was being approached piecemeal, rather than in a systematic and integrated manner. The DNFSB informed DOE that comprehensive planning methods, such as those contained in DOE Order 430.1A, *Life Cycle Asset Management*, should be used to better identify hazards and necessary controls and improve safety. LLNL revised its approach to be safer and to follow standard DOE expectations.

Lightning Protection at LANL. The DNFSB noted that the safety-class lightning protection system at the LANL's Weapons Engineering and Tritium Facility does not appear to provide adequate lightning protection for the facility. In addition, the DNFSB submitted a report presenting additional deficiencies with the lightning protection systems at various facilities at LANL. LANL personnel are working to address these issues.

GOAL 3 — Safe Disposition of Hazardous Remnants of Weapons Production

Objective 3–A:	Material Stabilization. The DNFSB and its staff will verify that DOE properly characterizes, stabilizes, processes, and safely stores surplus plutonium, uranium, and other actinides, residues, spent fuel, and wastes from the nuclear weapons program, and that DOE provides for expeditious disposal, as needed.

Examples of FY 2001 Accomplishments

High-Level Waste (HLW) Management at SRS. In response to the leakage of HLW from a storage tank and inadequate corrective action from DOE and its contractor, the DNFSB issued Recommendation 2001-1, *High-Level Waste Management at the Savannah River Site,* urging DOE to remove waste from the leaking tank and to improve the overall safety and operability of the HLW system at SRS. DOE's actions in response have improved the safety of HLW storage at SRS.

Plutonium Stabilization and Packaging. During FY 2001, Rocky Flats, Hanford, and LLNL each began packaging plutonium into high-integrity, long-term storage containers. This represented a significant safety improvement and fulfilled a commitment made by DOE in response to the DNFSB's Recommendations 94-1 and 2000-1 regarding the stabilization of legacy nuclear materials.

Hanford Spent Nuclear Fuel Project. During FY 2001, a major milestone in the implementation of Recommendation 94-1 was reached with the start-up of stabilization of spent fuel from the Hanford K-West Basin. The safe start-up of this activity followed several years of intensive preparations by DOE and extensive oversight by the DNFSB, which led to the identification and correction of numerous safety issues before operations commenced.

Examples of FY 2002 Accomplishments

Plutonium Stabilization. DOE completed several significant milestones in implementation of DNFSB Recommendation 94-1. Rocky Flats Environmental Technology Site completed repackaging more than 100 tons of plutonium-bearing residues and about one half of its plutonium metal and oxide. Hanford completed packaging its plutonium metal and stabilized all of its plutonium solutions.

Uranium-233 Stabilization. In response to DNFSB Recommendation 97-1, DOE commenced its ^{233}U inspection program at Oak Ridge National Laboratory. This program will characterize the hazards of materials stored for more than 20 years with little surveillance. So far, most packages inspected have been found to be in good condition, except for a package containing an uncommon form of ^{233}U. The inner can of this package was severely corroded.

Savannah River Depleted Uranium Storage. In March 2002, the DNFSB identified the need for DOE to address large quantities of depleted uranium materials stored in deteriorating containers and facilities at Savannah River. As a result, DOE management has initiated aggressive actions to disposition the material.

Examples of FY 2003 Accomplishments

Plutonium Stabilization and Packaging. In response to the DNFSB's Recommendations, DOE completed stabilizing and packaging all of the plutonium metal and oxide at the Rocky Flats Environmental Technology Site into durable, sealed containers complying with DOE-STD-3013 and completed the stabilization and packaging of plutonium solutions, alloys, polycubes, and residues at the Plutonium Finishing Plant at Hanford.

Highly Enriched Uranium at SRS. In accordance with the DNFSB's Recommendation 2000-1, operators at SRS began blending down solutions of highly-enriched uranium solutions. The low-enriched uranium solution resulting from this activity is being shipped off-site for fabrication into fuel for commercial power reactors.

Depleted Uranium at SRS. During approximately 40 years of plutonium production, a significant inventory of depleted uranium trioxide and metal accumulated at SRS. The DNFSB urged DOE to correct unacceptable storage conditions and to develop an integrated plan for disposing of this excess material. DOE responded with a project plan to dispose of these materials. Over packing of severely degraded drums is completed, and DOE is on track to dispose of more than 20,000 metric tons of excess depleted uranium from SRS by the end of 2004.

^{233}U in Sodium Fluoride Traps at ORNL. DOE is taking action in response to a letter issued by the DNFSB regarding the safe storage of sodium fluoride traps. ORNL is depressurizing the traps, which store ^{233}U hexafluoride and are being subjected to increasing internal pressure from radiolytic gas production.

GOAL 3 — Safe Disposition of Hazardous Remnants of Weapons Production

Objective 3–B:	**Facility Decommissioning:** The DNFSB and its staff will verify that DOE aggressively pursues the safe decommissioning of excess defense nuclear facilities that pose a significant risk to the workers or the public.

Examples of FY 2001 Accomplishments

Building 9206 at Y-12. For several years, the DNFSB pressed DOE to pursue risk reduction and deactivation activities at the Y-12 Building 9206. In FY 2001, DOE responded by raising the priority of hazard reduction and reclassifying some materials as waste for direct disposal in order to complete deactivation of the building in six years.

Hanford Site Deactivation Activities. During FY 2001, the DNFSB's staff continued to review deactivation and decommissioning efforts at Hanford. Comments regarding safety were given to the contractor; subsequently, changes were made and improvements were evident. The DNFSB also evaluated the site-wide approach to excess facility disposition at Hanford, and provided suggestions to improve the processes used to manage such work.

Examples of FY 2002 Accomplishments

Y-12 National Security Complex. As a result of continuing efforts by the DNFSB, the safety posture of Building 9206 has been improved. Stabilization of pyrophoric materials in Building 9206 was completed during FY 2002. Other highly reactive material has been processed and shipped out of the facility. Progress was also made in reducing the building's inventory of containerized highly-enriched uranium solids.

Rocky Flats Deactivation and Decommissioning (D&D) Activities. In a March 2002 letter to DOE, the DNFSB identified that improvements in activity-level work planning were needed to ensure that the often unique tasks associated with D&D work at Rocky Flats could be conducted safely. The DNFSB also highlighted the need for improved DOE oversight of the contractor's work planning, and for improved feedback and improvement processes to ensure that the underlying causes of problems in the planning and execution of D&D work are identified and corrected. DOE is taking comprehensive actions to address these issues.

D&D at Rocky Flats. The DNFSB observed that the D&D projects in Rocky Flats Building 707 and Building 776/777 had experienced many punctures of glovebox gloves. On-site evaluations by the DNFSB also noted that D&D personnel were not consistently using cut-resistant gloves while handling sharp objects during D&D activities. DNFSB discussions with Rocky Flats management personnel led to an increased emphasis on the use of cut-resistant gloves for D&D work, which is expected to help reduce worker injuries and contamination.

Lawrence Livermore National Laboratory. In March 2002, the DNFSB issued a letter to DOE highlighting the need to strengthen program planning and work integration for the deactivation of the LLNL Heavy Element Facility, Building 251. Subsequently, the laboratory began to implement the applicable DOE requirements. A project management plan that is now being developed should result in a better understanding of the complexity of the proposed work.

APPENDIX B: GSA LETTER ON POSTPONEMENT OF SAS 70 AUDIT

GSA

GSA Office of the Chief Financial Officer

SEP 27 2004

Defense Nuclear Facilities Safety Board
Attn: Kenneth Pusateri, General Manager
625 Indiana Avenue, N.W. Suite 700
Washington, DC 20004-2901

Dear Mr. Pusateri:

In my letter dated June 10, 2004, I reported to you that GSA chose PricewaterhouseCoopers (PwC) to perform a Statement of Auditing Standards (SAS) 70 Type II audit on our financial and payroll systems for fiscal year 2004, as outlined by the Office of Management and Budget (OMB) Memorandum number M-04-001.

Because of limited resources coupled with accelerated reporting deadlines, we have determined that we must focus our SAS 70 resources on payroll cross servicing for this year and conduct the SAS 70 audit of our financial system in fiscal year 2005. We will build the cost of that review in our rate structure or as a single line item on our Memorandum of Understanding for fiscal year 2005. For the current year, we will be happy to accommodate any financial system audit requests your auditors may have.

Our current SAS 70 schedule anticipates a final report available on October 29th.

If you have any questions or concerns, please contact Vickie Jones, Director, National Payroll Center at (816) 926-7548.

Sincerely,

Kathleen M. Turco
Chief Financial Officer

U.S. General Services Administration
1800 F Street, NW
Washington, DC 20405-0002
www.gsa.gov

APPENDIX C: LIST OF ABBREVIATIONS AND ACRONYMS

BIO . . . . . Basis for Interim Operations
CD . . . . . critical decision
CFR . . . . . Code of Federal Regulations
CY . . . . . calendar year
D&D . . . . . deactivation and decommissioning
DNFSB . . . . . Defense Nuclear Facilities Safety Board
DOE . . . . . (U.S.) Department of Energy
EH . . . . . DOE Office of Environment, Safety and Health
EM . . . . . DOE Office of Environmental Management
FR . . . . . facility representative
FRA . . . . . Functions, Responsibilities, and Authorities (Manual)
FTF . . . . . Filter Test Facility (at Oak Ridge)
FY . . . . . fiscal year
GPRA . . . . . Government Performance and Results Act
HLW . . . . . high-level (radioactive) waste
HEPA . . . . . high-efficiency particulate air (filter)
HEUMF . . . . . Highly Enriched Uranium Materials Facility
I&C . . . . . instrumentation and control
IEEE . . . . . Institute of Electrical and Electronics Engineers
INEEL . . . . . Idaho National Engineering and Environmental Laboratory
ISM . . . . . Integrated Safety Management
KAMS . . . . . K-Area Material Storage (at SRS)
LANL . . . . . Los Alamos National Laboratory
LLNL . . . . . Lawrence Livermore National Laboratory
NNSA . . . . . National Nuclear Security Administration
NTS . . . . . Nevada Test Site
PDCF . . . . . Pit Disassembly and Conversion Facility (at SRS)
PDSA . . . . . Preliminary Documented Safety Analysis
ORNL . . . . . Oak Ridge National Laboratory
ORR . . . . . Operational Readiness Review
RFETS . . . . . Rocky Flats Environmental Technology Site
SDOR . . . . . Saltless Direct Oxide Reduction
SNL . . . . . Sandia National Laboratories
SQA . . . . . software quality assurance
SRL . . . . . Special Recovery Line
SRS . . . . . Savannah River Site
SS-21 . . . . . Seamless Safety for the 21st Century
TSR . . . . . Technical Safety Requirement
USQ . . . . . Unreviewed Safety Question
WEF . . . . . Waste Examination Facility (at NTS)
WETF . . . . . Weapons Engineering Tritium Facility (at LANL)
WIPP . . . . . Waste Isolation Pilot Plant
WTP . . . . . Waste Treatment Plant (at Hanford)
Y-12 . . . . . Y-12 National Security Complex
^{229}Th thorium-229
^{233}U uranium-233
^{238}Pu plutonium-238