

FY 2010 PERFORMANCE AND ACCOUNTABILITY REPORT

**DEFENSE NUCLEAR FACILITIES
SAFETY BOARD**



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Chairman's Message

On behalf of the Members and staff of the Defense Nuclear Facilities Safety Board (Board), I am pleased to submit our Performance and Accountability Report (PAR) for FY 2010.

The primary purpose of the Board is to ensure adequate protection of public health and safety, strengthen safety of existing programs, and significantly reduce the chance of devastating accidents from becoming a reality in Department of Energy (DOE) defense nuclear facilities and operations. In addition to conducting safety oversight on hundreds of existing hazardous nuclear operations, the Board is obligated by law to conduct in-depth reviews of new defense nuclear facilities during both design and construction. Currently, DOE and the National Nuclear Security Administration (NNSA) are pursuing 18 new defense nuclear projects with an estimated value of more than \$20 billion, including \$12.2 billion for the DOE Waste Treatment and Immobilization Plant (WTP) at the Hanford Site. The design, construction, and initial startup of these new facilities typically requires more than 12 years. The design and construction reviews conducted by the Board on DOE facilities are resource intensive and time consuming, but necessary as these time-sensitive safety reviews are key to preventing safety flaws in design and construction that could render a newly constructed facility unusable. The Board is committed to early integration of safety into design.

The Board also provides a key component of the oversight that prevents an accidental detonation of a nuclear weapon during the evaluation, maintenance, or dismantlement process. Such an accident could result in catastrophic impacts on lives and property, as well as cripple our Nation's nuclear deterrent capability. The Board is the last line of defense in preventing serious safety vulnerabilities and tragic accidents from occurring in very complex and dangerous DOE defense nuclear facilities.

During FY 2010, the Board continued to make significant progress in ensuring the safety of the public and the workers at or near DOE defense nuclear facilities. On October 26, 2009, the Board issued Recommendation 2009-2, *Los Alamos National Laboratory Plutonium Facility Seismic Safety* which addressed the need for NNSA to take prompt action to reduce the potential consequences to the public from a seismic event at the Los Alamos Plutonium Facility. In response, NNSA took immediate actions to improve the facility's safety posture and is pursuing longer-term safety upgrades to the facility's safety systems. Additionally, the Board continued to apply extensive effort to achieving resolution of safety issues regarding the multibillion dollar Waste Treatment and Immobilization Plant under design and construction at the Hanford Site. During the last quarter of FY 2010, the Board devoted a substantial portion of its resources to preparing for a series of public hearings and meetings held at Hanford on October 7-8, 2010, to obtain detailed information on these issues from DOE and its contractors and consultants. Considering that the Board is a small agency with 103 FTEs and with new budget authority of \$26.1 million in FY 2010, I am proud to recognize the sustained and dedicated effort of our staff. The detailed performance reports that appear later in this document attests to the accomplishments of this small, but highly talented team. Given the scope and significance of our health and safety oversight responsibilities, the performance accomplishments far exceed the level of resources invested.

The Board is committed to ensuring that the public resources in our trust are used wisely. Office of Management and Budget Circular A-136 requires an assessment of the completeness and reliability of

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the program performance and financial data contained in this report. I conclude that the data are complete and reliable. In addition, the Circular requires an assessment of internal controls with a separate assessment required for internal controls related to the Federal Managers' Financial Integrity Act (FMFIA). Based on personal observation, internal control assessments on critical areas which are reviewed annually by the Board's Executive Committee on Internal Controls, and reasonable assurance statements provided by internal managers, I believe that no material internal control weaknesses exist. In fact, I am pleased to report that FY 2010 marked the third consecutive year that the Board's unqualified opinion on its financial statements was coupled with no instances of non-compliance with laws and regulations and no material internal control weaknesses.

The future holds many managerial challenges for the Board, both in terms of technically complex health and safety issues involving the disassembly, refurbishing, reassembly, and re-certifying of nuclear weapons and components, the acceleration of stabilization and clean-up work at many defense nuclear sites, and high-visibility decommissioning activities; as well the review of new DOE defense nuclear facilities in the critical design and construction phases. Moreover, the human capital issues will become critical to the viability of future Board operations.

The Board remains committed to improving DOE's management of safety at our Country's most sensitive defense nuclear facilities where our nuclear arsenal is maintained, and where hazardous nuclear materials and components are stored in more secure and stable 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.

A handwritten signature in black ink, appearing to read "Peter S. Winokur". The signature is fluid and cursive, with a large initial "P" and "S".

Peter S. Winokur, Ph.D., Chairman
November 15, 2010

Chapter 1 **Management's Discussion and Analysis**

INTRODUCTION

This Performance and Accountability Report (PAR) summarizes the Defense Nuclear Facilities Safety Board's (Board) oversight activities and associated resource expenditures for the period from October 1, 2009 through September 30, 2010 (FY 2010). This report was prepared pursuant to the requirements of the Accountability of Tax Dollars Act of 2002 and Office of Management and Budget (OMB) Circular A-136, which provides instructions on the preparation of PAR reports. Fiscal year 2010 is the seventh year that the Board has prepared and published a PAR report.

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 *Strategic Plan for FY 2003-2009* is available on the Internet at www.dnfsb.gov. In addition, agencies are also required to develop a performance budget with annual performance objectives that indicate the progress toward achievement of the strategic plan's goals and objectives. The Board performance objectives for FY 2011 and FY 2012, as well as representative accomplishments for FY 2007 through 2010, will be included in its *FY 2012 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 satisfied by this PAR.

Chapter 1, *Management Discussion and Analysis*, provides an overview of Board operations, and is divided into five sections: *About the Board* describes the agency's mission, organization structure, and the four major performance goals of the Defense Nuclear Facilities Safety Board; *Future Challenges* includes a review of upcoming issues; *Program Performance Overview* discusses the Board's success in accomplishing its performance goals; *Financial Performance Overview* provides highlights of the Board's financial position and audit results; and *Systems, Controls, and Legal Compliance* describe the agency's compliance with key legal requirements such as the Federal Information Security Management Act (FISMA), internal controls, and the Inspector General Act of 1978.

ABOUT THE DEFENSE NUCLEAR FACILITIES SAFETY BOARD

The Board, 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 Board 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 Board commenced operations in October 1989 with the Senate confirmation of the first five Board Members.

Organization

The Board is headed by 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 Board are designated by the President to serve as Chairman and Vice Chairman. Each Board 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 Board.

The Board'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 Board and DOE management officials and staff, and has proven to be beneficial for the timely exchange of information as the Board conducts its independent oversight mission.

The Board maintains on-site safety oversight of defense nuclear facilities by assigning experienced technical staff members to full-time duty at priority DOE defense nuclear sites. As of September 30, 2010, eleven full-time site representatives were stationed at the following DOE sites:

- Pantex Plant (2)
- Hanford Site (2)
- Savannah River Site (SRS) (2)
- Y-12 National Security Complex (2)
- Lawrence Livermore National Laboratory (LLNL) (1)
- Los Alamos National Laboratory (LANL) (2)

The Site Representative Program provides a cost-effective means for the Board 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, local, and tribal governments.

The Board's budget authority for FY 2010 was \$26.1 million supporting 103 full-time equivalent staff. The Board's health and safety oversight activities are funded exclusively from a direct appropriation included in the annual Energy and Water Development Appropriations Act. No other cost recovery mechanisms such as fees, annual charges, or reimbursement from the DOE are authorized for the Board.

Safety Oversight Responsibilities

The Board'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.*, which states:

- The Board shall review and evaluate the content and implementation of the standards relating to the design, construction, operation, and decommissioning of defense nuclear facilities of the Department of Energy (including all applicable Department of Energy orders, regulations, and requirements) at each Department of Energy defense nuclear facility. The Board shall recommend to the Secretary of

Energy those specific measures that should be adopted to ensure that public health and safety are adequately protected. The Board shall include in its recommendations necessary changes in the content and implementation of such standards, as well as matters on which additional data or additional research is needed.

- The Board shall investigate any event or practice at a Department of Energy defense nuclear facility which the Board determines has adversely affected, or may adversely affect, public health and safety.
- The Board shall have access to and may systematically analyze design and operational data, including safety analysis reports, from any Department of Energy defense nuclear facility.
- The Board shall review the design of a new Department of Energy defense nuclear facility before construction of such facility begins and shall recommend to the Secretary, within a reasonable time, such modifications of the design as the Board considers necessary to ensure adequate protection of public health and safety. During the construction of any such facility, the Board shall periodically review and monitor the construction and shall submit to the Secretary, within a reasonable time, such recommendations relating to the construction of that facility as the Board considers necessary to ensure adequate protection of public health and safety. An action of the Board, or a failure to act, under this paragraph may not delay or prevent the Secretary of Energy from carrying out the construction of such a facility.
- The Board shall make such recommendations to the Secretary of Energy with respect to Department of Energy defense nuclear facilities, including operations of such facilities, standards, and research needs, as the Board determines are necessary to ensure adequate protection of public health and safety. In making its recommendations, the Board shall consider the technical and economic feasibility of implementing the recommended measures.

In support of this mission, the Board 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:** The design and construction of new DOE defense nuclear facilities, and major modifications to existing facilities.
- AREA 4. NUCLEAR SAFETY PROGRAMS AND ANALYSIS:** The development, implementation, and maintenance of DOE regulations, requirements, and guidance affecting public or worker health and safety; and the establishment and implementation of safety programs at DOE defense nuclear facilities.

The FY 2010 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 Board is facing a number of significant challenges that impact the accomplishment of its independent health and safety oversight mission. In addition to conducting nuclear safety oversight of hundreds of existing defense nuclear operations, the Board is obligated by law to conduct in-depth reviews of new defense nuclear facilities during design and construction. DOE has 18 design and construction or major modification projects currently underway or planned for the near future at an estimated value of more than \$20 billion.

Second, the Board's Congressional oversight and appropriations committees have continued to direct that the Board increase both the scope and pace of its independent health and safety oversight reviews at all DOE defense nuclear facilities, with special attention on new facilities in various design and construction stages, while continuing to ensure that legacy facilities are properly and competently maintained. Having noted repeated problems with DOE's new construction programs and associated cost overruns where significant safety flaws were not identified by DOE or its contractors early in the project development cycle, these committees have called upon the Board to apply its health and safety expertise at higher and higher levels of scrutiny. For example, the FY 2011 Senate Authorization bill's report (Report 111-201, National Defense Authorization Act for Fiscal Year 2011) includes:

The committee is concerned that with several major new nuclear facilities planned, including the uranium processing facility, the chemical and metallurgical research replacement facility, as well as new work on plutonium pit disassembly and plutonium oxide production, the DNFSB will need additional technical staff to review fully the operational nuclear safety for the new projects.

Third, the DOE Office of Management continues its review to reissue all documents containing safety requirements during the coming years. During the past year, the Board engaged DOE on several fronts, culminating in a public meeting and hearing in May, successfully alerting the highest levels of DOE to the Board's concerns with this course of action. This is another resource-intensive and time-consuming task for the Board as it ensures DOE properly reissues appropriate safety-related DOE directives while preserving the nuclear safety requirements that have been painstakingly developed in the course of more than 60 years of nuclear operating experience.

Fourth, the President has established a vision and goal of taking concrete steps toward a world without nuclear weapons while (as long as these weapons still exist) maintaining a safe, secure, and effective arsenal to deter any adversary, and guarantee that defense to our allies. The National Nuclear Security Administration (NNSA) has developed a plan for maintaining and evolving the nuclear weapons stockpile and infrastructure that includes completing a series of life extension activities that will enhance stockpile safety, security, and effectiveness without requiring additional underground nuclear tests. This plan entails significant new funding for new initiatives which in turn will require additional oversight responsibilities for the Board.

A fifth challenge is maintaining a determined, focused, and well-executed human capital program within the Board. Because the Board'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 continue to be critical to the successful accomplishment of the Board's mission. The loss of technical competence due to retirements and other reasons must be countered with an aggressive recruiting campaign for new engineering talent at all levels including entry level engineers.

Oversight of New DOE Design and Construction Projects

The Board is required by law to review design and construction projects to ensure the safety of the public and workers is addressed early in the design process. The Board will continue to expend considerable resources to review the ongoing design effort as well as the construction activities at new DOE defense nuclear facilities.

DOE has 18 design and construction or major modification projects currently underway at an estimated value of more than \$20 billion. The Board 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 Waste Treatment and Immobilization 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 is now estimated to cost in excess of \$12.2 billion. The WTP is a complex, high-risk program that has changing design and construction parameters, that will require more than 15 years to complete and will operate for decades.

The design and construction reviews conducted by the Board on WTP and other new DOE facilities are resource intensive and time consuming, but are key to preventing safety flaws in design and construction that could render a newly constructed facility unusable. The Board scheduled a public hearing for October 7-8, 2010 to address concerns with the WTP.

Increased Congressional Concerns about DOE Facilities and Operations

Congress has continued to express its concern, both during hearings and in legislation, with DOE's ability to manage its nuclear programs. With its well-recognized technical expertise and cost-effective methods for conducting nuclear health and safety oversight, the Board has been asked to do more to assist DOE in meeting mission requirements. More recent indications of Congressional intent and concerns (in addition to the 2011 Senate authorization bill (S.3454) referenced above) is the Senate Authorization bill's report (Report 111-201, National Defense Authorization Act for Fiscal Year 2011), which includes:

The committee recommends an increase for the PF-4 facility at Los Alamos National Laboratory to address the active ventilation system issues that have been identified by the Defense Nuclear Facility Safety Board.

The Defense Nuclear Safety Board (DNFSB) has a statutory responsibility to oversee operational nuclear safety aspects of the WTP project. Part of this responsibility includes oversight of the facility construction and design to ensure that the design meets DOE industry standards and guidance for nuclear safety. The committee notes that the EM program has committed to provide to the DNFSB the documentation and safety analysis to allow the DNFSB to carry out its responsibilities effectively.... The committee continues to expect this whole review and design change process to be carried out expeditiously but also thoroughly and to be kept informed by both DOE and the DNFSB as the effort progresses.

The committee is concerned that with several major new nuclear facilities planned, including the uranium processing facility, the chemical and metallurgical research replacement facility, as well as new work on plutonium pit disassembly and plutonium oxide production, the DNFSB will need additional technical staff to review fully the operational nuclear safety for the new projects.

The committee notes that the efforts of the National Nuclear Security Administration (NNSA) at the new highly enriched uranium storage facility at the Y-12 facility in Oak Ridge, Tennessee, to work with the DNFSB to identify and to resolve safety issues early on in the design process was a successful model. The committee hopes that the NNSA will follow this model as they design and construct the new facilities.

Currently the DNFSB has been heavily focused on design changes that the DOE has proposed to the Waste Treatment Plant (WTP) at the DOE Hanford facility. While the committee supports efforts to improve the overall operability and reliability of the WTP, this facility must also operate safely and for many years to process all of the waste at Hanford. As a result, the proposed changes must be understood and analyzed from both throughput and operational safety perspectives. The committee urges the DOE to continue to conduct the analysis necessary to justify the changes to the WTP.

Review of DOE Directives

DOE Order 251.1C, *Departmental Directives Program*, was approved in January 2009. This directive codifies a set of principles for the DOE directives system intended to simplify and clarify requirements, reduce redundancy and unnecessary burden, and support improved management and mission accomplishment as outlined in a memorandum issued by the Secretary of Energy on September 10, 2007. Because DOE Order 251.1C establishes the framework for the entire directives system, it affects all DOE safety directives. Further, DOE's Office of Health, Safety and Security (HSS) has been leading a multi-phased, multi-year effort to review and streamline key safety directives to ensure they meet the Secretary of Energy memorandum on an individual basis.

In 2010, the directives improvement effort was redirected by the Deputy Secretary of Energy's announcement of a safety and security reform plan that would, among other things, eliminate half of the HSS directives. This led to an exchange of correspondence between the Board and DOE, and was ultimately discussed at a public meeting held by the Board on May 12, 2010. DOE revised its reform plan, satisfactorily addressing the Board's concerns about the need for a rigorous and comprehensive

approach for revising safety directives. DOE's directives revision effort is occupying a significant portion of the Board's resources. As DOE reissues its directives to comply with the new program, and continues the HSS directive-by-directive reviews under the auspices of the *Department of Energy 2010 Safety and Security Reform Plan*, the Board is reviewing all of them to ensure health and safety requirements are properly included.

Presidential Priorities

The President has established a vision and goal of taking concrete steps toward a world without nuclear weapons while (as long as these weapons still exist) maintaining a safe, secure, and effective arsenal to deter any adversary, and guarantee that defense to our allies. NNSA has developed a plan for maintaining and evolving the nuclear weapons stockpile and infrastructure that includes completing a series of life extension activities that will enhance stockpile safety, security, and effectiveness without requiring additional underground nuclear tests. Accordingly, the President's FY 2011 Budget Request incorporates significant increases of approximately 10 percent for the NNSA Weapons Activities accounts (from \$6.384 billion to \$7.009 billion), including more than \$2.0 billion for Stockpile Support Activities (up \$405 million or approximately 25 percent) and more than \$2.3 billion for infrastructure projects (up \$102.6 million or 4.8%). In addition, the Budget Request projects an increase in the Weapons Activity appropriation of approximately \$1.8 billion from FY 2011 (\$7.009 billion) through FY 2020 (\$8.8 billion), an additional 25 percent increase. These activities require Board oversight.

Human Capital - The Board's Greatest Asset

Sixty-eight percent of the Board's FY 2010 obligations were dedicated to salaries and benefits for its staff and Board Members. The Board must function as an oversight organization comprising leading technical experts who quickly recognize problems in the hundreds of hazardous operations conducted daily throughout the DOE defense nuclear complex. The Board relies on a determined, focused, and well-executed human capital program that uses all available tools to attract and retain the technical talent necessary to accomplish the Board's mission. After years of experience, the Board has determined that its technical staff requires scientists and engineers with extensive backgrounds in technical disciplines such as nuclear-chemical processing; conduct of operations; facility safety analysis; conventional and nuclear explosive technology and safety; nuclear weapons safety; storage of nuclear materials; nuclear criticality safety; and waste management. Virtually all of the technical staff personnel have technical master's degrees; those personnel who do not are actively pursuing graduate degrees. Approximately 22 percent of the technical staff members have doctoral degrees. Because the Board's health and safety Recommendations and other advisories to the Secretary of Energy are based on in-depth technical information and detailed safety analyses, recruitment and retention of scientific and technical staff members with outstanding qualifications continues to be critical to successful accomplishment of the Board's mission.

During FY 2010, the Board increased its staff from 102 personnel to 106, despite losing seven people to retirement and other attrition. Building on its hiring successes of the past several years, the Board will continue an aggressive approach to reach out to mid-career and senior-level scientists and engineers. The combination of an aging workforce and high demand for experienced scientists and engineers by other organizations will impact Board operations if not dealt with in an aggressive manner. Approximately 17 percent of the Board's technical staff is eligible for regular retirement today. Competition for scientists

and engineers with the Board's required expertise continues to be very stiff due to the growth of the commercial nuclear industry, the consequent need for increased technical expertise by the Nuclear Regulatory Commission, the Department of Defense's emphasis on combating weapons of mass destruction, and DOE's nuclear weapons complex activities. Consequently, the Board expects the need to spend more resources on recruiting highly qualified technical personnel in a highly competitive job market.

The Board will continue its highly competitive three-year Professional Development Program (PDP), which brings entry-level technical talent into professional positions within the Board straight from college. 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. The Board met its goal of recruiting three people into the program in FY 2010, and now has a total of six in the program at various stages of development.

PROGRAM PERFORMANCE OVERVIEW

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

The Board 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 Board 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 weapon stockpile and complex. Board 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 Board'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 Board, 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 Board'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.

Board oversight in this area includes the retrieval, stabilization, and safe interim storage of spent nuclear fuel and sludges in the K-Basin at the Hanford Site in Washington, the Savannah River Site, and the Idaho National Laboratory. The Board exercises oversight of 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 Laboratory. The Board will also provide health and safety oversight of DOE programs to safely deactivate and decommission facilities at the Hanford and Savannah River Sites, the Idaho National Laboratory, the Y-12 National Security Complex in Tennessee, 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 Board. 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 Board 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 Board 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 Board'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 principles and core functions.

The Board'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 18 projects in the design and construction phase. Examples of these new projects include the Integrated Waste Treatment Unit, currently in the construction stage at the Idaho National Laboratory; the Hanford Waste Treatment and Immobilization Plant, which is in the design and construction phases; the Highly Enriched Uranium Materials Facility, which is in the start-up phase at the Y-12 National Security Complex; the Chemistry and Metallurgy Research Replacement Facility, which is in both the design and construction phases at the Los Alamos National Laboratory; and the Salt Waste Processing Facility, which is in the design and construction phases at the Savannah River Site.

Outcome: DOE will have acknowledged, acted upon, and/or resolved the health and safety issues raised by the Board. 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 Board's oversight effort in this area focuses on issues where a complex-wide perspective on health and safety issues 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 efficacy 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 Board'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 Board'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 Board continues its efforts to ensure that DOE maintains a vigorous nuclear criticality safety infrastructure to support nuclear operations. The Board 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 Board. 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.

Interdependency of the Four Performance Goals

The interdependence of these four strategic areas of concentration must be understood to appreciate the efficiency of the Board's operating plan and corresponding organizational alignment. The "lessons learned" from the Board's health and safety oversight activities cut across 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 Board must assess the safety of hazardous activities that support the nuclear weapons stockpile (Area 1). To accomplish its general goal, the Board 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 nuclear 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 Board 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 Salt Waste Processing 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 Board 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 Board evaluates the directives, standards, and programs governing DOE’s safe performance of its hazardous defense nuclear activities. The Board’s first three strategic areas of concentration heavily rely upon the implementation of specific DOE rules and directives. The Board’s integrated, comprehensive oversight of the safety of DOE’s defense nuclear facilities requires that the Board carefully evaluate these safety programs.

The synergy gained from constant information sharing among the Board’s matrixed staff, which supports all four strategic areas of concentration, is key to achieving the Board’s general goal. The Board’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 Board gains management flexibility and avoids the need to establish layers of middle management that divert 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 Board may reassign resources among these groups as necessary.

FINANCIAL PERFORMANCE OVERVIEW

As of September 30, 2010, the Board had adequate internal controls to conduct its health and safety oversight mission and to ensure that obligations did not exceed its total budget authority. As with many small agencies, the Board has adopted the “economies of scale” philosophy for obtaining needed administrative support services. For financial support, the Board has negotiated interagency agreements with the Bureau of the Public Debt and the National Finance Center for personnel/payroll services, and the General Services Administration (GSA) for accounting services on a fee-for-service basis. The Board’s financial statements were prepared in accordance with the accounting standards codified in the Statements of Federal Financial Accounting Standards (SFFAS) and OMB Circular A-136, *Financial Reporting Requirements*.

Sources of Funds

The Board receives an annual appropriation, for Salaries and Expenses, with the funds made available until expended. The sources of funds available for obligation in FY 2010 and FY 2009 are listed as follows:

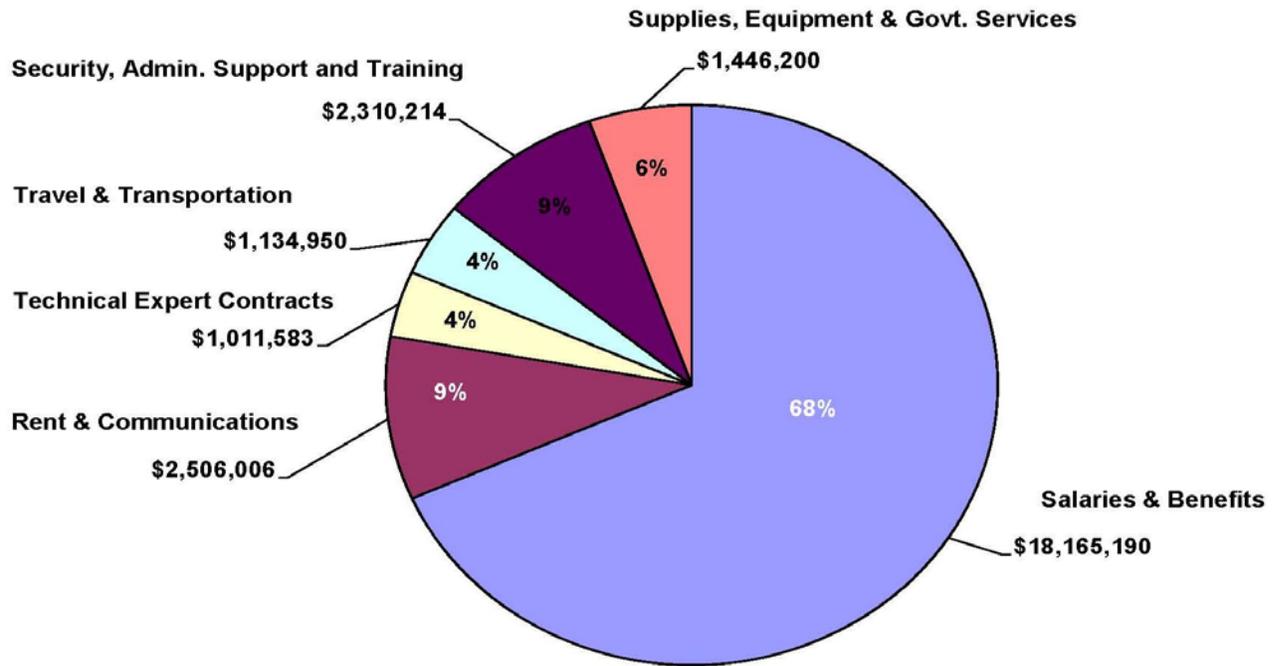
	<u>FY 2010</u>	<u>FY 2009</u>
New Budget Authority	\$26,086,000	\$25,000,000
Prior Year Unobligated Balance	3,851,686	3,250,056
Recovery of Prior Year Obligations & Offsetting Collections	481,182	464,294
Total Budgetary Resources	\$30,418,868	\$28,714,350

The Board has no reimbursable work for others authority, and is not authorized to collect fees or charges for its oversight services conducted at DOE defense nuclear facilities.

Uses of Funds by Function

The Board incurred obligations of \$26,574,143 in FY 2010. As shown on the chart on the following page, the FY 2010 budget was used primarily to pay the salaries and benefits of our employees, with most of the remaining resources dedicated to rent and the logistical support of the five Board Members and employees as they conducted oversight operations.

FY 2010 Total Obligations = \$26,574,143



AUDIT RESULTS

The Board received an unqualified audit opinion on its FY 2010 financial statements. The auditors disclosed no instances of noncompliance with laws and regulations and identified no material internal control weaknesses.

A copy of the full audit report as provided to the Board can be found in Chapter 3 of this PAR.

FINANCIAL STATEMENT HIGHLIGHTS

The Board’s financial statements summarize the financial activity and financial position of the agency. The financial statements, footnotes, and required supplemental information appear in Chapter 3, *Auditors’ Reports and Financial Statements*. Analysis of the principal statements follows:

Analysis of the Balance Sheet

	<u>FY 2010</u>	<u>FY 2009</u>
Total Assets	\$10,597,711	\$10,176,769
Total Liabilities	\$2,958,570	\$2,732,532
Net Position	\$7,639,141	\$7,444,237

The Board’s assets were \$10,597,711 as of September 30, 2010, an increase of \$420,942 from the end of FY 2009. Its total liabilities and net position (which together equal total assets) were \$2,958,570 and \$7,639,141, respectively, as of the end of FY 2010, increases of \$226,038 and \$194,904, respectively, from the end of FY 2009. The Fund Balance with Treasury (FBWT) represents the Board’s largest asset. The increases in Total Assets and Net Position were due to the higher level of new budget authority in FY 2010 (~ \$1.1M), much of which was offset by higher expenditures as the Board operated at an increased FTE level in FY 2010.

Analysis of the Statement of Net Cost

	<u>FY 2010</u>	<u>FY 2009</u>
Net Cost of Operations	\$26,860,574	\$25,117,100

The Board’s net cost of operations for the year ended September 30, 2010, was \$26,860,574, an increase of \$1,743,474 or 6.9% over the FY 2009 costs. Costs increased primarily because of higher employee expenses as the Board operated at 103 FTEs in FY 2010 versus 99 in FY 2009 and incurred higher employee costs due to Federal pay raises and other non-discretionary compensation and benefits increases. The Board has historically operated with a target FTE level of 100, but experienced significant attrition in recent years. As a result of a targeted and successful hiring campaign, the Board increased personnel in FY 2009 from 95 at the start of the year to 102 at the end, and continued this success in FY 2010, ending the year with 106 personnel and a resulting FTE count of 103.

Analysis of the Statement of Changes in Net Position

The Statement of Changes in Net Position reports the changes in net position during the reporting period. Net position is affected by changes in its two components - Cumulative Results of Operations and Unexpended Appropriations. The increase in Net Position of \$194,904 from FY 2009 to FY 2010 is due primarily from the increase in the Cumulative Results of Operations.

Analysis of the Statement of Budgetary Resources

The Statement of Budgetary Resources shows the sources of budgetary resources available and the status at the end of the period. It presents the relationship between budget authority and budget outlays, and reconciles obligations to total outlays. For FY 2010, the Board had Total Budgetary Resources available of \$30,418,868, the majority of which was derived from new appropriations. Total Budgetary Resources was increased by \$1,704,518 or 5.9% from the FY 2009 amount of \$28,714,350 due to the increased level of appropriations received.

For FY 2010, the Statement of Budgetary Resources showed the Board incurred obligations of \$26,574,143, an increase of \$1,711,479 or 6.9% over FY 2009 obligations of \$24,862,664. The increase was primarily due to higher personnel costs resulting from higher FTEs and Federal pay raises. Total Net Outlays for FY 2010 were \$25,471,590, a \$1,428,556 or 5.9% increase over FY 2009 outlays of \$24,043,034.

LIMITATION OF THE FINANCIAL STATEMENTS

The principle financial statements have been prepared to report the financial position and results of operations of the Board, pursuant to the requirements of the Accountability of Tax Dollars Act of 2002. While the statements have been prepared from the books and records of the Board 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 used for a component of the U.S. Government, a sovereign entity.

The Board's financial statements were audited by Lani Eko & Company, LLC.

COMPLIANCE WITH THE INSPECTOR GENERAL ACT OF 1978

The Board is required to file a report annually under the Inspector General Act of 1978, Pub. L. 95-452, Oct. 12, 1978, 92 Stat. 1101, *codified at* 5 U.S.C. Appendix 3. The statute mandates a report which:

- (A) States whether there has been established in the Federal entity an office that meets the requirements of this section;
- (B) Specifies the actions taken by the Federal entity otherwise to ensure that audits are conducted of its programs and operations in accordance with the standards for audit of governmental organizations, programs, activities, and functions issued by the Comptroller General of the United States, and includes a list of each audit report completed by a Federal or non-Federal auditor during the reporting period and a summary of any particularly significant findings; and
- (C) Summarizes any matters relating to the personnel, programs, and operations of the Federal entity referred to prosecutorial authorities, including a summary description of any preliminary

investigation conducted by or at the request of the Federal entity concerning these matters, and the prosecutions and convictions which have resulted.

The Board reports as follows for Calendar Year 2010:

- (A) The Board did not establish an inspector general's office.
- (B) The Board took the following actions to ensure audit of its programs and operations:
 - Annual Financial Statements Audit in accordance with the Accountability of Tax Dollars Act of 2002.
- (C) The Board referred no matters to prosecutorial authorities.

SYSTEMS, CONTROLS, AND LEGAL COMPLIANCE

This section provides information on Board's compliance with the Federal Managers' Financial Integrity Act (FMFIA) and the Improper Payments Information Act, as well as other management information, initiatives, and issues. FMFIA requires that agencies establish controls that provide reasonable assurance that: (1) obligations and costs comply with applicable law; (2) assets are safeguarded from waste, loss, unauthorized use, or misappropriation; and (3) revenues and expenditures are properly recorded and accounted for. It also requires the Chairman to provide an assurance statement on the adequacy of management controls.

Assurance Statement (FMFIA)

The Defense Nuclear Facilities Safety Board's (Board) management is responsible for establishing and maintaining effective internal controls that meet the obligations of FMFIA within their areas of responsibility. Based on line managers' knowledge of daily operations and other management reviews, the Board is able to provide an unqualified statement of assurance that the internal controls meet the objectives of FMFIA.



Peter S. Winokur, Ph.D.
Chairman

11-15-10
Date

Improper Payments Information Act

The Board 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 electronic funds transfer payments. The Board does not administer any entitlement, grant, or loan programs. During FY 2010 GSA and the Bureau of the Public Debt made net total payments of \$25,471,590 on behalf of the Board. Neither the GSA accounting staff, nor the Board's finance staff, has identified any improper payments during this period.

Federal Travel Card Program

The Board 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 Board'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 2010, 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 Board 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

The Board 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 2010 transactions using individual purchase cards totaled \$453,968. The Board established a system of internal controls to ensure that only authorized purchases are made by each card holder. The Board's purchase card procedures were distributed to all new purchase cardholders during FY 2010. These procedures stressed the requirement for completion of the electronic training program necessary to exercise the delegations of procurement authority.

The Board'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 Board contracting officer who gives final approval of invoices. The number of purchase cardholders is kept at the minimum necessary to effectively conduct Board operations. At the close of FY 2010, the total number of purchase cards issued was 9 at headquarters, and 5 at our field locations.

Federal Information Security Management Act (FISMA)

The Federal Information Security Management Act (FISMA) requires each agency to report annually to OMB on the status of their information technology (IT) security program. In FY 2010, the Board has continued to submit all required FISMA reports to OMB, and for the second year has used OMB's automated reporting tool, CyberScope, to submit the required FISMA reports.

The Board continued to build on the progress made in the prior year and improve its IT security posture. Based on the standard procedures the Board has instituted, no additional areas of concern or material weaknesses were identified in the independent auditor's internal control report for the third year in a row.

Government Accountability Office (GAO) Investigations and Reports

Audit follow-up 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 2010, the GAO did not conduct any reviews or investigations of Board oversight programs, and there are no open audit recommendations from previous GAO reviews.

Chapter 2

Program Performance

Overall Outcome: Using its expert knowledge, the Board has complied with its statutory mission to ensure that public and worker health and safety are adequately protected at DOE defense nuclear facilities and met its performance goals for FY 2010. In a few cases noted in the report, additional safety improvements sought by the Board have not yet been fully achieved by DOE. The Board is actively pursuing these safety improvements in FY 2011.

INTRODUCTION

The Board's contribution to the safety of DOE's defense nuclear activities derives from four basic types of activities that are embodied in the Board's enabling legislation. First, the Board evaluates DOE's organization policies and processes to ensure that fundamental safety requirements necessary to undertake highly hazardous operations exist at DOE. These reviews evaluate topics such as technical competence of DOE and contractor personnel, adequacy of safety requirements and guidance, and the presence of a strong safety culture. The deficiencies in Federal oversight and corporate safety programs revealed by the Deepwater Horizon oil rig accident clearly illustrate the safety risks inherent in deficiencies in these areas and the need for safety organizations, such as the Board, to emphasize reviews of this type. The Board plans this type of oversight in advance and those plans are generally not affected by unanticipated changes in DOE's plans or activities.

The second major type of safety oversight activity performed by the Board is the evaluation of actual hazardous activities and facilities in the field. These reviews focus on identifying the hazards attendant with DOE's mission activities and evaluating the controls put in place to mitigate those hazards. The Board plans for these types of reviews based on the risk, complexity, maturity, and significance of the activities underway or planned by DOE. However, unanticipated changes in DOE's plans or new, emergent information often change the priority of the Board's oversight in this area. The Board continuously seeks to be proactive and to focus DOE's attention on the most significant safety issues present in the defense nuclear complex at any given time. Therefore, because the priority of safety issues can change rapidly, the Board cannot always predict in advance what activities it will review or what safety outcomes it will ultimately achieve.

Third, the Board provides expert-level reviews of the safety implications of DOE's actions, decisions, and analyses. It is extremely important that the Board provide DOE with independent evaluations of the technical quality and safety impacts of DOE's decisions and actions. For example, well-intended actions by DOE managers can have significant unintended negative consequences if they are based on faulty, inadequate, or misunderstood information.

The Board attempts to be proactive in conducting this type of reviews, but it is necessary that DOE first develop at least preliminary plans with sufficient detail to allow for a meaningful technical review. Therefore, it is not possible for the Board to plan its efforts in this important area explicitly in advance.

The Board does allocate resources to this form of oversight, and does report the significant outcomes that result from such oversight in its performance reports.

The last major type of oversight performed by the Board 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 Board's efforts, this may be the area in which the Board 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 Board and its staff.

The Board uses its Strategic Plan and Annual Performance Plan to ensure that its resources remain focused on the most significant safety challenges and the DOE activities that warrant the most external review. All of the Board's safety activities are closely tied to goals and objectives embodied in these plans. This approach gives the Board confidence that its staff (103 FTEs in FY 2010, including five full-time Board Members) and budget (approximately \$26.0 million in FY 2010) are dedicated to the highest-risk activities under the Board's jurisdiction. The Board's strategic plan may be viewed in its entirety on the Board's internet website at www.dnfsb.gov.

The information in this *Performance and Accountability Report* is also provided directly to the Congress in the Board's statutorily required annual report, also available on the Board's website. There are slight differences between the two reports because the annual report covers calendar years rather than fiscal years. The Board's *Twenty-First Annual Report to Congress* will be issued during the first quarter of CY 2011. The Board's annual reports and performance reports are drafted by Federal employees of the Board with only administrative assistance from contractors. The Board also provides periodic reports to Congress and DOE on the status of significant unresolved technical differences between the Board and DOE on issues concerning (1) the design and construction of DOE's defense nuclear facilities and (2) the infrastructure of aging DOE defense nuclear facilities.

SAFETY GOALS

The Board last 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 evolved during the latter half of that decade (a new revision is planned for FY 2011). The performance goals that result from the current strategic plan are summarized below. The Board also provides periodic reports to Congress and the DOE on the status of significant unresolved technical differences between the Board and DOE on issues concerning the design and construction of DOE's defense nuclear facilities.

SAFETY OVERSIGHT GOAL

The Board 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 Board has identified the following four interdependent, strategic areas of concentration and has developed performance goals and outcome objectives for each:

AREA 1. NUCLEAR WEAPONS 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 the health and safety of the workers and the public.

ANNUAL PERFORMANCE OBJECTIVES

The Board's *Annual Performance Plan for FY 2010* identified annual performance objectives that consist of reviews that were to be conducted in support of the Board'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 Board's PAR.

The Board 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 Board communicates the results of its technical reviews;
- The DOE's subsequent development of appropriate corrective actions to resolve the Board-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 from DOE and its defense nuclear contractors, Board correspondence, staff reports, DOE and contractor public testimony, and other sources. Past reporting (see the Board's annual reports) of Board-identified issues and associated DOE responses demonstrates that the Board has had a clear and positive impact on the safety of DOE defense nuclear activities.

Evaluation of the Fiscal Year 2011 Performance Plan

No changes to the *FY 2011 Performance Plan* have been identified based on a review of actual results achieved in FY 2010.

Assessment of the Reliability and Completeness of Performance Data

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

The Board did not conduct an independent program evaluation in FY 2010.

Comparison of Fiscal Year 2010 Actual Performance with Planned Performance

The following pages provide detailed information comparing the Board's actual performance driving safety improvements at DOE to its plans for FY 2010. Information concerning the Board's performance accomplishments in FY 2006 through FY 2009 is contained in the Board's FY 2011 Budget Request to Congress, which is published on our website at www.dnfsb.gov.

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 Board, and the facilities are operated to approved safety standards, rules, orders, and directives. Follow-up technical evaluation of DOE's nuclear stockpile activities will verify necessary improvements in safety.

FY 2010 Performance Objectives:

The Board 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 Board and its staff will conduct assessments of DOE's efforts to develop and implement safety management systems for stockpile management activities. The Board'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 safety management systems. These reviews will focus on activities at the Pantex Plant, Y-12 National Security Complex (Y-12), Savannah River Site (SRS) tritium facilities, Los Alamos National Laboratory (LANL), Lawrence Livermore National Laboratory (LLNL), Sandia National Laboratories (SNL), and the Nevada Test Site (NTS).

Representative areas for Board and staff review include:

- Development, implementation, and refinement of site-wide and facility-specific safety analyses and controls for nuclear facilities and activities (e.g., safety analysis reports and annual updates developed per 10 CFR 830).
- Weapon-specific safety analyses and controls identification and implementation for nuclear weapon activities (e.g., B53, W76, W84, and W88).
- Nuclear explosive operations at Pantex (e.g., conduct of operations, procedures, lightning protection, electrostatic discharge controls), and adequacy of the Nuclear Explosive Safety Study process.
- Laboratory support of nuclear explosive operations at Pantex (e.g., sensitivity testing of high explosives, electrostatic discharge and lightning protection studies, weapon response evaluation and documentation).

- Cross-cutting functional areas at Pantex, Y-12, NTS, LANL, LLNL, SNL, or SRS tritium facilities (e.g., legacy material disposition, nuclear criticality safety, fire protection, nuclear explosive safety, seismic design, conduct of operations, work planning, training, maintenance, configuration management).
- Evaluation of the safety culture of the Pantex Plant and associated design agencies.
- Special studies of unique or significant hazards at DOE nuclear facilities (e.g., classified projects, process technology alternatives, and disposition of special items and by-product materials).
- Readiness activities for the Highly Enriched Uranium Materials Facility.
- Modernization plans for Y-12, including startup of the Beryllium Capability Project, accelerated dismantlement of weapons components, and infrastructure upgrades.
- Plutonium pit manufacturing and certification at LANL.
- Corrective actions to strengthen institutional safety programs and infrastructure at LANL, LLNL, and SNL.
- Readiness to dispose of damaged nuclear weapons or improvised nuclear devices at NTS.
- Subcritical experiments at NTS.
- Nuclear explosive operations at the Device Assembly Facility at NTS.
- Readiness for Criticality Experiments Facility operations at the Device Assembly Facility at NTS.
- Authorization of SNL Auxiliary Hot Cell Facility and the Radioactive Mixed Waste Management Facility as Hazard Category 3 facilities.
- Implementation of Recommendation 2005-1, *Nuclear Material Packaging*.

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 surveillance, life extension, or dismantlement projects at Pantex, Y-12, or NTS that start in FY 2010.

FY 2010 Measured Performance:

Continued Operation of the LANL Chemistry and Metallurgy Research Facility. In letters dated October 23, 2007, and May 16, 2008, the Board questioned DOE's decision to operate the 55-year-old Chemistry and Metallurgy Research facility an estimated six years past the previously planned shutdown date of 2010. Given the age, material condition, nuclear material inventory, and seismic fragility of the facility, the Board encouraged DOE to assess these risks promptly and evaluate alternative means of accomplishing programmatic requirements. In May 2009, the Board reviewed LANL's proposed safety basis for operations beyond 2010, identified inconsistent or inadequate assumptions in the safety analysis,

and pointed out opportunities to improve safety by reducing the radioactive material at risk. LANL is revising the proposed safety basis. The Board reviewed an updated version of the safety basis in August 2010 and is preparing a response at this time.

Integrated Nuclear Planning. The Board identified that DOE had not demonstrated formal mechanisms to ensure that design requirements and interfaces for pit manufacturing at LANL were appropriately managed and controlled across the suite of projects that contribute to the future plutonium processing infrastructure. In response, DOE developed an Integrated Nuclear Planning process to improve coordination among its projects as national security mission requirements are refined. The Board has participated in three Integrated Nuclear Planning workshops this fiscal year and believes the process is effective.

Transuranic Waste Operations at LANL. In a letter dated January 18, 2007, the Board urged NNSA to promptly develop a viable pathway for shipping high-activity transuranic waste drums from LANL to the Waste Isolation Pilot Plant for disposal. In response, DOE has bolstered waste disposition work at LANL by facility infrastructure upgrades, new safety basis documents, and training and qualification of operators. By April 2008, NNSA had remediated all of the high-activity drums then available for processing. LANL continues to accelerate offsite shipment of transuranic waste in an effort to comply with a Consent Order agreement with the state of New Mexico that mandates closure of the current LANL transuranic waste site by 2015.

Nuclear Criticality Safety at LANL. In a September 10, 2007, letter to NNSA, the Board expressed concern that a software tool (MASS) was being relied upon by operators as a control to ensure compliance with criticality safety limits without appropriate Software Quality Assurance. Overall, the actions that were taken by LANL in response resulted in a strengthened safety posture, and the schedule for bringing the nuclear criticality safety program into full compliance with industry standards and DOE directives appears acceptable. LANL began implementing a new software tool (MARTracker) in FY 2010. The Board will review this program in FY 2011. LANL has experienced twelve criticality safety infractions thus far in FY 2010, up from eight in FY 2009. The Board anticipates greater oversight and involvement in FY 2011.

LANL Plutonium Facility Confinement Ventilation. The decade-old safety basis for the Plutonium Facility credited a passive confinement strategy instead of active confinement ventilation as a safety-class control to protect the public from postulated accidents. As part of DOE's implementation plan for the Board's Recommendation 2004-2, NNSA and its contractor evaluated the facility's confinement strategy in parallel with an effort to develop a new safety basis for the facility. In its June 16, 2009, report to the Board, NNSA asserted that some modifications identified as needed in the confinement ventilation evaluation may not be needed to meet the overall safety strategy and goals under the final approved documented safety analysis. The NNSA response contained inconsistencies regarding the course of action to address the scenario of a seismic event followed by a fire, and the revised safety basis approved by NNSA accepted accident consequences that far exceeded the applicable evaluation guidelines for dose to the public. As a result, the Board issued Recommendation 2009-2, *Los Alamos National Laboratory Plutonium Facility Seismic Safety*, on October 26, 2009, to which DOE responded with an Implementation Plan on July 13, 2010. The Board is closely following the implementation of near-term improvements in the facility's safety posture and NNSA's development of a strategy for long-term improvements in the facility's safety systems.

LANL Plutonium Facility Vault Water Bath. The Board identified issues with the storage of plutonium-238 materials in the cooling water bath in the LANL Plutonium Facility's storage vault. Many of the containers lacked manufacturing pedigree and data on the condition of their contents and were vulnerable to rupture if cooling was lost. In response, the laboratory developed a plan to repack or overpack all questionable containers into robust packaging by June 2010. LANL completed these operations as scheduled in June 2010, thereby eliminating a significant hazard.

LANL Weapons Engineering Tritium Facility. In October 2008, LANL ceased operations at the tritium facility due to a Technical Safety Requirement violation and problems with the pressure safety program. These issues were initially identified by a Board review in July 2007 and communicated to DOE by letter on October 16, 2007. To comply with the facility's safety basis, the laboratory made changes to the piping system, pressure relief components, and the facility's pressure safety procedures. The Board carefully tracked these changes and questioned the laboratory's plan (viewed as acceptable by the NNSA Los Alamos Site Office) to restart operations without a formal readiness review. In response to the Board's concerns, NNSA-Headquarters held discussions with its site office and the laboratory, ultimately resulting in the decision to perform formal contractor and federal Operational Readiness Reviews. LANL's approach has been to divide the return to operation into three phases. The Phase I readiness review authorizing low pressure operations was successfully completed in June 2010. The remaining phases are planned for completion later this year.

Nuclear Explosive Safety. The Board evaluated 10 Nuclear Explosive Safety (NES) studies or change evaluations conducted at Pantex, including the B53 and W84 dismantlement NES studies and the W78 Operational Safety Review.

Quality of Safety-Related Information for Nuclear Explosive Operations. The Implementation Plan for Recommendation 98-2, *Safety Management at the Pantex Plant*, addressed the need for DOE to issue further guidance on its expectations for the evaluation and documentation of weapon response to potential accident environments and stimuli. The Board and DOE agreed that the revised DOE-STD-NA-3016-2006 would include the needed requirements for these analyses. In FY 2010, the Board began a comprehensive review of the design laboratories' implementation of the standard, identifying strengths and weaknesses of the program.

Lightning and Electrostatic Discharge Protection at Pantex. The Board issued a letter on March 30, 2007, identifying work that was needed to address the hazards posed by the indirect effects of a lightning strike on Pantex facilities. DOE responded by forming the Nuclear Security Enterprise Electromagnetic Committee to analyze both lightning and electrostatic discharge (ESD) hazards. The committee is systematically addressing the Board's concerns and is improving the safety of operations at Pantex relative to lightning and ESD hazards. The Board has engaged experts in the field of lightning effects to verify DOE's analyses. In FY 2010, the Board met with the committee and presented the findings of lightning experts, verifying the DOE results and highlighting areas that needed further study and clarification.

Pantex Procedures. In 2009, the Board completed a series of onsite reviews and provided immediate feedback to Pantex on areas where improvements could be made in nuclear explosive operating procedures. On October 15, 2009, the Board issued a letter detailing shortcomings in the process for

developing and implementing technical procedures at Pantex. Pantex is making improvements in the areas identified by the Board.

Processing Anomalous W76-1 Units. In June 2009, Pantex stopped processing W76-1 units due to safety concerns with an anomalous component. In a letter dated January 25, 2010, the Board detailed concerns with the failure to ensure that the safety implications of the anomalies were communicated by the design laboratory to Pantex. NNSA directed an extensive review of the event and is instituting measures to prevent such communication breakdowns.

Hazard Analysis Reports. The Board issued a letter on July 6, 2010, detailing specific issues concerning Pantex's compliance with DOE-NA-STD-3016-2006 in developing Hazard Analysis Reports and establishing sufficient controls. NNSA is working to respond to the Board's issues.

Y-12 Nuclear Criticality Safety. The Board completed a review of nuclear criticality safety evaluations that found that certain evaluations failed to meet select requirements, potentially compromising the safety margin for fissionable material operations. In response to the Board's January 23, 2009, letter documenting the review, the contractor took actions to strengthen the evaluations and correct any weaknesses identified during an extent-of-condition review. The Board noted that the approach planned on the extent-of-condition reviews included only a small sampling of the active criticality safety evaluations. In response, NNSA committed to review all active criticality safety evaluations.

Highly Enriched Uranium Materials Facility Readiness. The Board observed the NNSA Operational Readiness Review for startup of the new Highly Enriched Uranium Materials Facility. The operations will involve receipt, re-containerization, and storage of enriched uranium materials. NNSA completed packaging and moving all enriched uranium from the old warehouse to the new facility, which represents a major improvement in storage conditions.

Special Capability Glovebox Project at Y-12. The Board's review of the Special Capability Glovebox design in 2007 found no major design issues but identified questions regarding administrative controls. The Board continued its review in FY 2010 and found no issues that would impact the plan to begin operations in late calendar year 2010.

Conduct of Operations at Y-12. After several operational events, the Board urged NNSA to consider action to achieve consistent, disciplined operations. NNSA developed and began to implement corrective actions to address these issues including additional periodic training. The Board also noted that procedure use practices were inconsistent and that poor procedural compliance had been a contributor to many operational events. NNSA issued a Y-12 procedure use policy and is making progress toward reviewing all procedures authorized for use during nuclear operations for potential improvements, including identifying the appropriate use category for each procedure.

Y-12 Activity-Level Work Planning. The Board provided the results of its review of Y-12 activity-level work planning in a letter to DOE dated January 22, 2009. The Board identified several weaknesses with the planning, control, and oversight of work. In response to the Board's concerns, the contractor placed some work activities on hold until work planning problems could be resolved and corrected.

Continued Operations of the Enriched Uranium Operations Building. Due to concerns over NNSA's ability to safely operate the Enriched Uranium Operations Building for an extended period of time, the Board advocated that NNSA regularly assess the physical condition of the building in a letter dated March 13, 2007. Per the Board's request, NNSA has provided the Board with three annual reports (in March 2008, March 2009 and April 2010) that included specific actions NNSA has planned and taken to improve the safety posture of the Enriched Uranium Operations Building.

Freeze Protection Program at Y-12. In 2008 and 2009, fire suppression systems in nuclear facilities at Y-12 were compromised during periods of extended freezing weather. The Board urged NNSA to clearly define freeze protection responsibilities for operations managers of nuclear facilities and to preplan facility-specific actions to be taken during the onset of freezing weather (e.g., verifying actuation of heaters). NNSA has revised applicable site procedures to incorporate these improvements. Facility-specific plans and checklists have been developed.

LLNL Tritium Process Station Startup. On January 27, 2010, The Board issued a letter which communicated deficiencies in the safety basis of the Tritium Process Station, including weaknesses in the hazard analysis and the associated safety controls. As a result of the letter, LLNL committed to revising the hazard analysis in the annual update to the Documented Safety Analysis as well as implementing additional managerial oversight in operations.

Work Planning and Control at LLNL. The Board issued a letter on June 14, 2010, conveying concern over the activity-level work planning and control processes utilized at LLNL. The Board assessed that the laboratory guidance was vague and that the work planning process suffered as a result. Guidance issued by NNSA in 2006 concerning work-planning best practices was not being utilized by the laboratory, and the Livermore Site Office was not enforcing the guidance. NNSA is developing its response to the issues identified by the Board.

NNSS Device Assembly Facility (DAF) Fire Suppression System. In 2008, the Board determined that the DAF fire suppression had significant deficiencies that should be corrected before beginning more hazardous operations. In response, NNSA initiated a project to assess the condition of the system and analyze and prioritize needed improvements, developed improvement options, and began improvements to the system. In FY 2010, NNSA installed new debris strainers in fire suppression system piping, initiated a procurement to repair the water supply tank, initiated procurement of a standalone fire suppression unit to potentially replace or augment the suppression system, and submitted line item requests to replace the water tank and lead-in pipes.

Readiness to Dispose of a Damaged Nuclear Weapon or Improvised Device at NNSS. NNSA developed a plan for implementation of safety controls and upgrades appropriate for the scope of operations for the facility at NNSS (G tunnel) that would be used in disposition of an improvised nuclear device. As a result of the Board's interactions and discussions in FY 2010, NNSA completed tunnel ventilation improvements and began preparing for operational safety improvements.

Conduct of Operations and Configuration Management at NNSS. Previously the Board addressed concerns with the state of vital safety systems and safety management programs of nuclear facilities at NNSS, particularly at the Device Assembly Facility. In 2009 and 2010 there were numerous reports of issues with the conduct of operations and the configuration of safety systems. As a result of interactions

with the Board, in FY 2010 NNSA implemented compensatory measures to improve the conduct of operations and configuration of safety systems at nuclear facilities at NNSS.

Hazard Categorization of Sandia National Laboratories Z Machine. On May 21, 2010, the Board issued a letter detailing concerns regarding the hazard categorization of the Z Machine at Sandia National Laboratories. In response, Sandia National Laboratories performed additional calculations and is planning to write a new hazard categorization position paper to justify the categorization of the Z Machine.

Auxiliary Hot Cell Facility at Sandia National Laboratories. The Board evaluated start-up activities for the Auxiliary Hot Cell Facility at Sandia National Laboratories. The facility will be used to repackage radioactive waste for shipment off-site. In response to issues identified by the Board, NNSA committed to implement additional controls to ensure adequate confinement of radiological materials. The Board will assess the implementation of these controls.

PERFORMANCE GOAL 2: NUCLEAR MATERIAL PROCESSING AND STABILIZATION

The processing, stabilization, and disposition of DOE defense nuclear materials and facilities 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 Board. 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 Board to stabilize and dispose of hazardous nuclear materials.

FY 2010 Performance Objectives:

The Board 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 Integrated Safety Management 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:

- H-Canyon processing campaigns, change to irradiated fuel processing, life extension activities, and documented safety analysis upgrades and implementation.
- Long-term storage of neptunium oxides at INL (Recommendation 2000-1).
- Complex-wide consolidation and disposition of special nuclear materials.
- Stabilization and disposal of plutonium-bearing residues at LANL (Recommendation 2000-1).
- Efforts to consolidate, store, and disposition spent nuclear fuel at Hanford, INL, and SRS.
- Conceptual design of systems to treat and store spent nuclear fuel sludge at the Hanford Site (Recommendation 2000-1).
- Removal and processing of salt waste from HLW tanks by the Interim Salt Disposition Project at SRS.

- Closure of HLW Tanks 5, 6, 18, and 19 at SRS.
- Design of the fluidized-bed steam reformer for processing the HLW from SRS Tank 48.
- HLW tank structural integrity at SRS and the Hanford Site and application of the results of DOE's corrosion testing program to tank chemistry controls.
- Operation of HLW retrieval and transfer systems at the Hanford and SRS tank farms.
- Conduct of operations and work planning at the Hanford Site.
- Design of supplemental processing and treatment of waste from Hanford tanks.
- Retrieval, characterization, and packaging of TRU waste at Hanford, LANL, ORNL, SRS, and the Idaho Cleanup Project.
- Design, acquisition, and first use of new WIPP remote-handled TRU waste emplacement equipment.
- TRU waste disposal operations at WIPP.
- WIPP update of Documented Safety Analysis and associated Technical Safety Requirements.
- Design and construction of the Tank W-1A excavation and remediation efforts at ORNL.
- Startup of drum venting operations at the TRU Waste Processing Center at ORNL.
- Implementation of DOE Order 410.2, *Management of Nuclear Materials*.
- Deactivation and decommissioning of facilities throughout the DOE defense nuclear complex including accelerated and new activities funded by the Recovery Act (e.g., Building 235-F at SRS, the Plutonium Finishing Plant at Hanford, and remote-handled TRU waste treatment at the Idaho Cleanup Project).

FY 2010 Measured Performance:

H-Canyon Life Extension. The Board reviewed DOE's application of the Integrated Facilities Aging Management program to evaluate the life extension needs of the H-Canyon facility at SRS. The Board found that while the program successfully identifies aging issues, follow-up to address these issues is often lacking. The Board noted this concern in a letter to DOE dated April 29, 2010. In response, DOE and its contractor reviewed and prioritized needed facility repairs to maintain safe operations at H-Canyon.

Recommendation 2001-1. In letters dated January 7, 2010, and May 27, 2010, the Board accepted DOE's latest implementation plan for Recommendation 2001-1, *High-Level Waste Management at the Savannah River Site*, as an interim plan, but requested a new, more detailed plan. The Board suggested

that DOE provide more definitive interim goals to show positive progress in meeting the recommendation. DOE began to revise the implementation plan to include more meaningful interim milestones.

Fire Protection Systems at SRS. The Board reviewed the fire protection program at SRS and identified weaknesses in equipment, management of exemptions and equivalencies, and staffing. In response to the Board's letter dated January 20, 2010, DOE addressed these weaknesses by purchasing new fire trucks and improving its fire protection management practices. Staffing remains an issue.

H-Canyon Safety Basis Upgrade at SRS. The Board reviewed the revised Documented Safety Analysis for the H-Canyon facility. This Documented Safety Analysis incorporates guidance from the latest DOE Standards. During the development of the new Documented Safety Analysis, the Board provided DOE with feedback regarding hydrogen explosions, Technical Safety Requirements, and ammonium nitrate explosions. DOE addressed many of the Board's comments in the approved document.

Transuranic Waste Operations at SRS. The Board reviewed startup of transuranic waste operations in F-Canyon and H-Canyon. In staff-to-staff discussions, the Board noted that the readiness preparations for H-Canyon did not adequately simulate the planned activities. In response, DOE extended the readiness activities to include additional simulations.

Spent Nuclear Fuel Operations at SRS. The Board reviewed spent nuclear fuel storage in L-Area as well as preparations for the movement of fuel from L- to H-Area to support spent fuel processing in the H-Canyon facility. The Board suggested that DOE reconsider the planned level of rigor for readiness activities for spent fuel restart. DOE now plans to use a more-formal contractor Readiness Assessment.

HLW Tank Integrity Program at SRS. The Board observed a DOE independent review of nondestructive examination techniques for HLW tanks. In a letter dated January 6, 2010, the Board suggested that DOE inspect a greater portion of HLW tank walls and explore faster inspection technologies. As a result, DOE revised its in-service inspection program at SRS to expand the scope of its inspections. DOE also plans to implement electromagnetic, acoustic testing (a faster technology) after the technology is qualified at Hanford.

Hazard Controls in Safety Basis Documents at SRS. The Board reviewed corrective actions taken by DOE at SRS to address past concerns regarding the formality of hazard controls in facility safety bases. While DOE had corrected the safety basis at the Waste Solidification Building, DOE had not corrected site procedures to prevent recurrence of the problem. In a letter dated July 16, 2010, the Board highlighted this lack of proper guidance at SRS and noted the possibility of missing hazard controls from the safety bases of other facilities. DOE took action to address this issue and to assess the extent of this condition at other sites in the DOE defense nuclear complex.

Work Planning and Conduct of Operations at Hanford Tank Farms. The Board reviewed work planning and conduct of operations at the Hanford Tank Farms. The Board noted several deficiencies in DOE's analysis of hazards, revision of work documents, use of work instructions, and ability to provide feedback and improvement to prevent recurrence of mistakes. In response to a Board letter dated March 12, 2010, DOE made several improvements to work planning processes and conduct of operations.

Safety Systems at Hanford Tank Farms. The Board identified inadequate pressure-relieving devices in the waste transfer lines associated with double-shell Tank AN-101 at Hanford. Following staff-to-staff discussions, DOE reconfigured the system to include reliable safety features to prevent over-pressurization during waste transfer operations. DOE also revised the safety analysis to address this change.

Safety Basis at Hanford Tank Farms. The Board reviewed the newly revised safety basis at the Hanford Tank Farms. In a letter to DOE dated August 5, 2010, the Board noted a number of analytical and implementation deficiencies in the safety basis. These deficiencies would limit the effectiveness of the prescribed safety controls in the prevention and mitigation of certain postulated accident scenarios. As a result, DOE is working to resolve the weaknesses in the safety basis.

Hanford Sludge Retrieval and Disposition Project. The Board reviewed DOE's conceptual design for systems to remove radioactive sludge from the K West Basin at Hanford. The Board is planning to provide several comments and concerns regarding the conceptual design. DOE is working with the Board to address these issues in a timely manner.

Work Planning at Hanford. The Board reviewed work planning and control for activities performed by the central plateau remediation contractor at Hanford. In a letter dated September 23, 2010, the Board noted weaknesses in the identification of activity-level hazards, tracking of controls in the work packages, and the conduct of pre-job briefings. The Board plans to track DOE's corrective actions in fiscal year 2011.

Safety Analysis at Hanford Plutonium Finishing Plant (PFP). The Board reviewed the PFP safety analysis and noted deficiencies in factors used to compute radiation dose for postulated accident scenarios. DOE's contractor subsequently identified that some dose conversion factors used to estimate dose consequences were contrary to consensus standards and potentially non-conservative. DOE and its contractor revised and approved the facility's safety analysis. DOE also noted this problem in the safety bases of other facilities and began corrective action.

PFP Decontamination Agents. The Board reviewed the safety of various chemical decontamination agents that DOE used or planned to use at PFP. In staff-to-staff discussions, the Board pointed out hazards associated with the decontamination agents. DOE conducted additional analyses of the agents to better understand the hazards and to develop appropriate hazard controls.

Remote Handled Transuranic Waste Repackaging at Idaho. The Board identified worker safety issues associated with loading high-radiation canisters of transuranic waste in Building CPP-666 at Idaho. After staff-to-staff discussions, DOE modified the crane that moves the canisters and incorporated a shielded transfer device into the process to reduce worker radiation doses.

Radiation Protection Program at WIPP. The Board continued an ongoing review of the radiation protection program at WIPP. In several staff discussions and a telephone conference, the Board noted weaknesses in the requalification process for radiological control technicians and in DOE's triennial audit program. DOE corrected the qualification process for technicians and improved its oversight program.

Transuranic Waste Handling at WIPP. The Board reviewed conduct of operations and work planning and control programs for waste handling at WIPP. The Board identified problems in conduct of operations and site-wide safety culture. DOE acknowledged these issues and agreed to address them.

Electrical Systems at WIPP. The Board reviewed the status of WIPP electrical systems and found several material and programmatic deficiencies. In a letter dated September 22, 2010, the Board noted the contractor's electrical safety program was weak, there was an inadequate training program for electrical workers, and there was no program for identifying parts and components that were not certified by a nationally recognized testing laboratory. DOE has agreed to address these issues.

PERFORMANCE GOAL 3: NUCLEAR FACILITIES DESIGN AND INFRASTRUCTURE

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.

OUTCOME: DOE will have acknowledged, acted upon, and/or resolved the health and safety issues raised by the Board. Follow-up technical evaluation will verify necessary 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.

FY 2010 Performance Objectives:

The Board and its staff will continue reviews of DOE's implementation of integrated safety management (ISM) in design and construction activities. At least five reviews will be completed. In general, the reviews will evaluate the adequacy of geotechnical specifications and hazards analyses; the design of safety-related structures, systems and components (SSC); and the adequacy of SSC installation, startup, and operational readiness. The Board will also review proposed changes in the safety control strategy as facilities are constructed. Candidates for review include:

- Continue design and construction reviews of the Waste Treatment Plant at the Hanford Site.
- Review construction and preparations for startup of the Integrated Waste Treatment Unit at Idaho National Laboratory.
- Review the enhanced preliminary design and final design of the Chemistry and Metallurgy Research Replacement facility at Los Alamos National Laboratory.
- Review the final design of the Radioactive Liquid Waste Treatment Facility Replacement Project at Los Alamos National Laboratory.
- Continue construction operational reviews of the Criticality Experiments Facility at the Device Assembly Facility at Nevada Test Site.
- Review the design of the Pit Disassembly and Conversion Project at Savannah River Site.
- Review the preliminary design of the Plutonium Preparation Project at Savannah River Site.
- Review construction of the Waste Solidification Building at Savannah River Site.
- Review construction and development of Technical Safety Requirements for the Salt Waste Processing Facility at Savannah River Site.

- Review the final design, construction, and preliminary startup activities for modifications to Building 3019 at Oak Ridge National Laboratory in preparation for processing of uranium-233.
- Continue review of preparations for operation of the Highly Enriched Uranium Materials Facility at the Y-12 National Security Complex.
- Complete review of the preliminary design of the Uranium Processing Facility at the Y-12 National Security Complex. Review the final design supporting site preparation work and long-lead procurement of equipment.
- Continue to review the quality improvements in the manufacture and qualification testing of safety-related HEPA filters.

As a result of these reviews, DOE will have acknowledged, acted upon, and/or resolved the health and safety issues raised by the Board. Follow-up technical evaluation will verify necessary safety improvement in the design and construction of DOE's new nuclear facilities and major modification to existing facilities. New nuclear facility designs will meet acceptable safety standards.

FY 2010 Measured Performance:

Waste Treatment and Immobilization Plant at the Hanford Site. The Board has continued its review of the design and construction of important-to-safety structures, systems, and components in the Waste Treatment and Immobilization Plant (WTP) facilities. The Board's activities primarily consisted of the evaluation of emerging issues and the resolution of previously identified issues. Specifically:

- DOE resolved issues identified by the Board in a letter dated December 2, 2009, regarding the adequacy of the structural steel designs for the Pretreatment, High-Level Waste, and Low-Activity Waste facilities.
- The Board identified safety issues in a letter dated January 6, 2010, that could arise as a result of inadequate mixing in process vessels.
- The Board encouraged DOE to complete an independent review of the revised safety design strategy for hydrogen in pipes and ancillary vessels. This review resulted in the identification of 32 findings related to the safety design strategy. DOE is in the process of addressing these issues.
- The Board identified that the methodology for evaluating the consequences of a spray leak from process piping in WTP was not technically correct. DOE agreed with the Board's conclusion and developed a new methodology for WTP. The Board is evaluating the revised approach and its application in WTP.
- The Board identified that DOE had selected a non-conservative value for the deposition velocity, which is a parameter used in the safety analysis to estimate how much radioactive material reaches the public following an accidental release of material.

DOE responded on September 8, 2010, to a set of questions regarding the Board's outstanding concerns. The Board held a public meeting and hearing in early October 2010 to discuss these issues further. The Board is evaluating DOE's responses to the questions and the testimony provided by DOE and its consultants and contractors at the public meeting and hearing. Based on this evaluation, the Board will determine what actions are necessary to ensure that WTP can carry out its important mission in a manner that protects the safety of the public and workers.

Integrated Waste Treatment Unit at Idaho National Laboratory. The Board continued its review of the design and construction of the Integrated Waste Treatment Unit. The Board's activities focused on the project team's selection and design of safety significant instrumentation that protect workers from chemical hazards. The Board reviewed the 90% design of the electrical system in April 2010 and identified issues related to the ampacity derating of long penetration seals and the seismic design and qualification of the emergency lights. Additionally, the Board worked with the project team to address the potential for corrosion of key components. Finally, the Board reviewed the safety basis documents for the facility and is working with DOE to resolve the resulting comments in a timely manner to support a DOE Operational Readiness Review in July of 2011, followed by facility startup in August of 2011.

Chemistry and Metallurgy Research Replacement (CMRR) Project at Los Alamos National Laboratory (LANL). The Board has continued its review of the enhanced preliminary design of the CMRR nuclear facility at LANL. The Board interacted with CMRR project personnel as they advanced the development of a detailed structural model for design. The detailed structural model will be directly used in the seismic analysis of the nuclear facility. The Board encouraged the development of this model so that the building's complex dynamic response can be adequately captured. The Board continued its review of seismic analysis input assumptions and the project approach to soil remediation. The Board provided feedback on seismic analysis issues including time history development and the approach to defining foundation input seismic motions. As a result of the Board's CMRR certification review, the project developed an approach to validate its design process. CMRR project personnel recently stated their intention to revise their approach to structural and seismic design; the Board is following these changes closely.

The Board initiated its review of the revised CMRR Preliminary Documented Safety Analysis. The Board's review will not be complete until the project finalizes updated System Design Descriptions and a complete Process Hazard Analysis. The Board identified habitability concerns with the Entry Control Facility (ECF), the location where operators will respond to design basis accidents including earthquakes. Currently, the CMRR project does not plan to ventilate the ECF. As a result of Board concerns, the project is completing additional studies to assess the impacts on CMRR of releases from adjacent facilities in the event of the design basis accidents.

Transuranic Waste Facility Project at LANL. NNSA placed the Transuranic (TRU) Waste Facility project on hold in late 2008 to reevaluate mission need and examine alternatives. The delay was in part due to concerns raised by the Board regarding the project's safety strategy. The project resumed in FY 2010 with a reduced scope that eliminated capabilities to process TRU waste and prepare waste shipments for offsite disposal. The project maintains staging, storage, and characterization functions for TRU waste. Though the scope changes resolved the Board's initial concerns, the Board reviewed the revised conceptual design in FY 2010 and identified additional safety issues. The Board identified the absence of controls to mitigate the design basis aircraft crash accident, as well as incorrect application of accident

analysis parameters from DOE technical standards to the seismic evaluation. The Los Alamos Site Office subsequently specified resolution of the Board's concerns as conditions of approval in the Conceptual Safety Validation Report. The Board will follow issue resolution during preliminary design.

Radioactive Liquid Waste Treatment Facility Upgrade Project at LANL. The Board confirmed that NNSA has resolved issues previously identified by the Board. Specifically, Federal oversight has improved, and the project team has successfully implemented improvements in its approach to achieving safety in design. The Board reviewed the 80% design the facility. In addition to addressing specific issues related to confinement and system protection during design basis events, the Board helped identify cost-effective strategies to resolve issues regarding the design basis chemical hazard. The project is currently on hold while NNSA reviews alternatives to reduce project cost. Board oversight activities will continue when NNSA decides upon a path forward.

Criticality Experiments Facility at NNS. NNSA moved the Criticality Experiments Facility from LANL and has been preparing for criticality experiment operations at the Device Assembly Facility. Previously the Board has reviewed and commented on the design for facility modifications and modification of the critical assembly machines, construction activities, and the re-build and testing of the four critical assembly machines. In FY 2010, the Board reviewed startup and acceptance testing, safety basis, instrumentation and control systems, and the readiness review process. The Board found deficiencies in the accident analysis, control set, and safety system design, and also identified the concern that adequate technical expertise had not been applied by NNSA and its contractors to evaluate and ensure safe operations. After resolution of these issues, criticality experiments should be ready to begin in FY 2011.

Fire Protection for Final High-Efficiency Particulate Air (HEPA) Filters for Savannah River Site (SRS) Salt Waste Processing Facility. The Board had previously determined that the design of the confinement ventilation system did not comply with DOE Standard 1066, *Fire Protection Design Criteria*, for protection of the final stage of HEPA filters. In response, the project has implemented a design change to include a manually activated deluge system upstream of the first HEPA filter stage. In addition, the project developed a crosswalk matrix documenting the technical justification for equivalency with the remaining DOE Standard 1066 requirements. The DOE Savannah River Operations Office approved the equivalency determinations. The Board believes the proposed design change with supporting equivalencies provide an adequate degree of fire protection for the confinement ventilation system.

Mixing System Controls and Operational Parameters for SRS Salt Waste Processing Facility. The Board reviewed the design, testing, and controls associated with the methods for mixing the contents of process vessels. The Board concluded that, given appropriate controls and operational parameters, the air pulse agitators should fulfill the functions assumed in the safety basis. However, the Board identified shortcomings with the testing and modeling that the project team should consider in the selection of controls and operational parameters. The project is taking action to address the Board's concerns.

Waste Solidification Building at SRS. The Board is currently reviewing the quality assurance program, including commercial grade dedication, at the Waste Solidification Building. Specifically, the Board's efforts are focused on the quality assurance aspects of the ongoing construction activities. In addition, the Board is planning to review the facility's instrumentation and control systems in the near future.

Uranium-233 Downblending at Oak Ridge National Laboratory. The Board reviewed the Preliminary Safety Design Report for the project and provided DOE with feedback indicating that the document did not fully address safety basis deficiencies noted in the Board's Periodic Report to Congress on issues concerning the design and construction of DOE's defense nuclear facilities. DOE has informed the Board that the next evolution in safety basis documentation would address the Board's concerns.

Highly Enriched Uranium Materials Facility at Y-12. To support the reviews for startup of operations, and as a follow-up to previous quality assurance reviews of the Highly Enriched Uranium Materials Facility, the Board initiated a review of the adequacy of a sample of Engineering Quality Requirement Document packages and corroborating vendor quality records or applicable quality documentation for completeness. The review determined that the document packages for the Secondary Confinement System and the Rackable Can Storage Boxes were complete. The Fire Suppression System document package was inadequate, lacking sufficient documentation to validate the commercial grade dedication activities and address all critical characteristics of a complete fire suppression system. Subsequent review of vendor records and purchase orders and interviews with quality assurance personnel by the project provided enough evidence that the system can meet safety expectations. The Board is encouraging DOE to share the lessons learned with the Uranium Processing Facility and other projects to help preclude recurrence of similar problems.

After the Y-12 contractor discovered non-safety wiring in a junction box that carries safety related wiring, the Board prompted a detailed technical evaluation of the nonconforming condition and a full extent-of-condition review. This extent-of-condition review is ongoing, and so far has discovered an additional nonconformance. Also during FY 2010, the Y-12 contractor performed a calculation that addresses issues previously raised by the Board regarding ampacity derating of cables passing through penetration seals.

Uranium Processing Facility at Y-12. The Board has continued to conduct reviews of project management, DOE oversight, safety system design, geotechnical and structural design, and technology development. The Board issued a letter on March 15, 2010, transmitting issues with the geotechnical and structural engineering for the project. Project personnel have identified acceptable resolution approaches for the issues and are finalizing design documents to provide verification that the issues are closed. The Board's staff assessed the 35% design of the electrical system in July 2010 and identified issues related to the lightning protection system and emergency lights.

The Board identified that the project strategy for combining critical decisions was not conducive to the verification of safety in the preliminary design. DOE has agreed with this concern and has initiated action to revise the project safety strategy. The Board identified that the long-lead procurement safety basis information was not complete to support a final design. DOE concurred with the findings and identified that the cause was the use of a design-build procurement approach for the long-lead equipment. DOE subsequently revised the strategy for long-lead equipment procurement to address this concern.

Filter Test Facility. Nuclear-grade high-efficiency particulate air (HEPA) filters are used in essentially all new nuclear facilities and are tested in the Filter Test Facility to ensure the filters meet performance requirements. In a letter dated March 17, 2008, the Board expressed concerns with degradation in quality of the nuclear filters as reported by the Filter Test Facility. On April 16, 2010, the Department of Energy (DOE) provided the Board with the final report documenting actions to identify and address quality problems with the manufacture of HEPA filters. While problems with manufacturer quality continue,

DOE is more aggressively addressing the deficiencies. This is evidenced by audits of a key filter manufacturer that yielded comprehensive corrective actions and formal corrective action requests being developed in response to defects found by the Filter Test Facility. The Board will continue to monitor DOE corrective actions to address the continuing unacceptably high filter failure rates.

Safety Classification of Fire Protection Systems. Board Recommendation 2008-1, *Safety Classification of Fire Protection Systems*, identified the need for standards for the design and operation of fire protection systems being relied upon as a primary means of protecting the public and workers from radiological hazards. As part of the Implementation Plan to address the recommendation, DOE and NNSA issued interim guidance on design and operations of safety-related fire protection sprinkler systems in February and March 2010, respectively. Several projects are now using this guidance in preparing their designs. The Board issued a letter to DOE in July 2010 pointing out that, although the interim guidance provides useful information for current and future projects, it does not define the comprehensive set of attributes of safety-related fire protection systems which the Board recommended to be incorporated into the DOE directives. The Board is working with DOE to complete the effort.

PERFORMANCE GOAL 4: NUCLEAR SAFETY PROGRAMS AND ANALYSIS

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.

OUTCOME: DOE will have acknowledged, acted upon, and/or resolved the health and safety issues raised by the Board. 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 2010 Performance Objectives:

DOE Directives. The Board will continue to assess the adequacy of proposed changes to DOE directives to ensure that any revisions are appropriate. The results of the directives reviews completed by the Board will be provided to DOE for action. The Board anticipates that approximately 20 DOE directives that may impact public and worker health and safety will require review, of which two or three are likely to require significant Board and staff interaction to ensure satisfactory resolution of potential issues. In 2009, the Board issued a recommendation that DOE establish a policy on the use of quantitative risk assessment for nuclear safety applications and establish the necessary requirements and guidance for quantitative risk assessment in a directive or directives. The Board will work with DOE to ensure that the applicable documents are appropriately developed. The Board also expects to continue its involvement in the efforts of the National Nuclear Security Administration (NNSA) to establish its own directives system. It is estimated that 15 NNSA directives will also require review. As a result of these reviews, new or modified health and safety directives will be issued, resulting in improved safety through standardized requirements and guidance that provide for adequate protection of the workers and the public as well as the protection of the environment.

Integrated Safety Management. The Board will continue its reviews of DOE's implementation of integrated safety management (ISM) and associated nuclear safety programs. In addition, while the Board has noted that considerable progress has been made in the implementation of ISM, 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. In addition, during FY 2010–2011, the Board will conduct a series of public hearings that will assess progress made in response to Recommendation 2004-1, *Oversight of Complex, High-Hazard Nuclear Operations*, and will be devoted to specific aspects of the implementation plan such as the role of the Central Technical Authority; feedback and improvement mechanisms; and the integration and support of research, analysis, and testing in nuclear safety technologies.

Safety Management Programs. Safety management programs are designed to ensure defense nuclear facilities are operated in a manner that adequately protects workers, the public, and the environment. At least five reviews will be completed in areas such as training and qualification, quality assurance, nuclear

criticality safety, software quality assurance, conduct of operations, configuration management, maintenance management, and readiness preparations. As a result of these reviews, it is anticipated that DOE will provide an acceptable approach and schedule for resolution of any identified issues to support the safe operation of defense nuclear facilities.

FY 2010 Measured Performance:

DOE Directives. As part of its continuing review of new and revised DOE directives, the Board and its staff evaluated and provided constructive critiques of over 35 directives associated with, but not limited to radiological protection, maintenance management, worker protection, and project management. At year's end, the staff was in the process of resolving issues regarding revisions or drafts of 12 pending directives to improve the content, clarity, and consistency of safety requirements and guidance. Examples of reviews completed in FY 2010 include:

- DOE Order 426.2, *Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities*
- DOE Order 433.1B, *Maintenance Management Program for DOE Nuclear Facilities*
- DOE Order 458.1, *Radiation Protection of the Public and the Environment*
- DOE Guide 423.1-1A, *Implementation Guide for Use in Developing Technical Safety Requirements*
- DOE Standard 1172-Year, *Safety Software Quality Assurance Functional Area Qualification Standard*
- DOE Standard 1158-2010, *Self-Assessment Standard for DOE Contractor Criticality Safety Programs*

In addition, the Board took actions in response to the *Department of Energy 2010 Safety and Security Reform Plan* issued by the Deputy Secretary of Energy on March 16, 2010, which called for “near term relief from specific low-value burdensome requirements as well as longer-term streamlining of requirements that will lead to measureable productivity improvements.” The Deputy Secretary’s plan called for a 50 percent reduction in the number of directives managed by DOE’s Office of Health, Safety and Security. After reviewing the draft project management plan for this effort, the Board sent a letter to the Secretary of Energy on May 5, 2010, requesting a report and briefing to clarify the criteria DOE was using to analyze individual directives to determine cancellation and consolidation and the steps that DOE was taking to improve and strengthen directives. After the Board’s May 12, 2010, public hearing and meeting on nuclear safety oversight, DOE revised its reform plan, satisfactorily addressing the Board’s concerns about the need for a rigorous and comprehensive approach for revising safety directives.

Recommendation 2009-1, *Risk Assessment Methodologies at Defense Nuclear Facilities.* In 2009, as a result of several years of review of the use of quantitative risk assessment methodologies, the Board issued Recommendation 2009-1. The Board’s recommendation identified the need for adequate policies and associated standards and guidance on the use of quantitative risk assessment methodologies for safety applications at DOE defense nuclear facilities. During 2010, the Board worked closely with DOE to develop an acceptable Implementation Plan, and a final plan was accepted in May 2010. The Board will evaluate DOE’s implementation of the plan and continue to work toward improving DOE’s safety posture with respect to the use of risk assessment methodologies.

Recommendation 2007-1, *Safety-Related In Situ Nondestructive Assay of Radioactive Materials.* The Board evaluated DOE's progress in implementing Recommendation 2007-1. DOE's Technical Support Group, defined in the recommendation's implementation plan and comprising senior DOE and contractor personnel with significant experience in nondestructive assay, continued to meet the plan's milestones and to provide the results of these efforts to the Board.

Recommendation 2004-1, *Oversight of Complex, High-Hazard Nuclear Operations.* All 22 commitments made in the DOE Implementation Plan responding to Recommendation 2004-1 were due to be complete by 2009. However, several commitments were late or had no discernable response from DOE, and the Board was concerned that some previous improvements had degraded as result of changes in management approach and/or neglect. The Board held two public meeting and hearings on the efficacy of DOE's safety oversight to address these concerns. The first public meeting and hearing held on November 12, 2009, examined DOE's commitment to integrated safety management as its core safety management system. Senior DOE and NNSA leadership confirmed their ongoing support for and commitment to integrated safety management. The second public hearing and meeting, held on May 12, 2010, focused on the efficacy of DOE and NNSA's safety oversight programs and the potential impact of significant changes to DOE's directives system envisioned under DOE's safety and security reform effort. The public meetings and hearings were effective in heightening the awareness of senior DOE and NNSA leadership to the need for maintaining effective safety management and oversight systems for defense nuclear facilities. The Board will continue to investigate all aspects of DOE's response to Recommendation 2004-1 in future public meetings and hearings and by conducting reviews related to key aspects of this recommendation.

Recommendation 2002-1, *Quality Assurance for Safety-Related Software.* The Board closed Recommendation 2002-1 on April 14, 2010, based on DOE's progress in establishing the necessary processes for software quality assurance. The Board continued to evaluate the efficacy of quality assurance practices germane to safety-related software throughout the complex.

Integrated Safety Management. In addition to oversight activities related to Recommendation 2004-1, the Board continued its reviews of DOE's implementation of integrated safety management (ISM) and associated nuclear safety programs. While the Board noted considerable progress in the implementation of ISM, continued DOE efforts are necessary to maintain ISM systems and ensure continuous improvement across the complex. The Board reviewed the effectiveness of the implementation of ISM in activity-level work planning processes at five sites. The reviews revealed that the ISM programs at the Hanford Tank Farms, Lawrence Livermore National Laboratory, Pantex Plant, Hanford Plateau Remediation, Waste Isolation Pilot Plant, and Idaho National Laboratory have not been fully implemented at the activity level. In all cases, weaknesses were identified in the processes used to analyze activity-level hazards and to provide adequate controls to ensure worker safety. DOE has made efforts to address these weaknesses, but further improvement is needed.

Leading Indicators for Safety Performance. Over the last several years, DOE and its contractors have worked to develop and maintain performance-based contractor assurance systems. These systems are typically large databases of performance metrics selected to monitor contractor performance in satisfying DOE's contractual expectations. With the Board's encouragement, DOE and its contractors are beginning to consider whether data in those systems may provide leading indicators for facility safety

programs. The Board has suggested a methodology for identifying and using leading indicators for facility safety programs and will continue to encourage DOE and its contractors in their efforts.

Nuclear Criticality Safety. The Board conducted nuclear criticality safety reviews in 2010 at the Salt Waste Processing Facility and H-Canyon at the Savannah River Site. The Board also followed progress made by DOE contractors on nuclear criticality safety issues identified in previous years, specifically at the Y-12 National Security Complex and Los Alamos National Laboratory. The Board reviewed nuclear criticality safety evaluations from several sites, including the Nevada National Security Site, Los Alamos National Laboratory, Y-12, Savannah River Site, and Hanford. The Board also reviewed the technical basis for the criticality alarm system at the Y-12 Highly Enriched Uranium Materials Facility. The Board continued to evaluate complex-wide activities as described in DOE's annual report on criticality safety. Each of these reviews confirmed that the various criticality safety programs and associated documentation were adequate, but the Board noted several opportunities for improvement and communicated them to DOE and its contractors.

Readiness Reviews. The Board evaluated Startup Notification Reports for defense nuclear facilities under its cognizance and reviewed startup and restart activities accordingly, including the following readiness reviews:

- Highly Enriched Uranium Materials Facility operational readiness review at Y-12.
- Weapons Engineering Tritium Facility operational readiness review at Los Alamos National Laboratory.
- Critical Experiments Facility operational readiness review at Nevada National Security Site.
- Transuranic Waste Processing Center Drum Venting operational readiness review at Y-12.
- Auxiliary Hot Cell Facility operational readiness review at Sandia National Laboratories.
- Barolo subcritical experiments operational readiness review at the Device Assembly Facility at Nevada National Security Site.
- Tritium Processing Station readiness assessment at Lawrence Livermore National Laboratory.

Conduct of Operations. The Board reviewed conduct of operations at Hanford in FY 2010. The Board noted weaknesses in work planning and control. The Board plans to follow DOE's efforts to improve work planning and control and conduct of operations at Hanford.

Justifications for Continued Operations. The Board continued its review and oversight of DOE's processes and practices associated with the use of justifications for continued operations (JCOs) at defense nuclear facilities. Previously the Board found a number of weaknesses in the JCO process and its implementation at defense nuclear facilities. In response to the Board's concerns, DOE developed and promulgated new and improved guidance in this important safety basis area. The Board will closely follow the implementation and effectiveness of the improved guidance.

Safety System Design, Functionality, and Maintenance. In 2009–2010 the Board continued to conduct reviews of safety system design, functionality, and maintenance at defense nuclear facilities and to follow up on previously identified issues. Throughout FY 2010 the Board interacted with DOE and NNSA to properly disposition the findings from these reviews. As a result of the Board's involvement, all of the heat source plutonium in vulnerable packaging at Los Alamos National Laboratory has been repackaged

into robust containers, and significant safety improvements have been implemented at the laboratory's tritium facility. The Board conducted safety reviews of the Tritium Processing Station at Lawrence Livermore National Laboratory, the proposed Savannah River Site Enhanced Chemical Cleaning system, the Hanford Tank Farms, and the Barolo subcritical experiment activity at the Nevada National Security Site. A number of important safety issues were identified during these reviews and communicated to DOE for resolution.

Safety Analysis Requirements for Defining Adequate Protection for the Public and the Workers. Following issuance of Recommendation 2009-2, *Los Alamos National Laboratory Plutonium Facility Seismic Safety*, the Board inquired about the adequacy of the requirements and criteria in the DOE directives system pertaining to the problems that led to the issuance of the Recommendation. The Board reviewed DOE's responses to its inquiries and concluded that DOE's requirements were not sufficiently systematic and comprehensive to ensure that (1) documented safety analyses for defense nuclear facilities are prepared such that they demonstrate adequate protection of the public and the workers, and (2) the DOE approval authority ensures the adequacy of the proposed controls for protection of the public and the workers. The Board will pursue resolution of these issues during FY 2011.

Federal Technical Capability Program (FTCP). The Board participated in FTCP meetings and activities during FY10 to ensure DOE maintained a competent and highly capable workforce at its defense nuclear facilities. The Board reviewed the FTCP's FY 2010 Operational Plan and provided input on the qualification of expert-level technical personnel. The Board also reviewed all newly issued or revised functional area qualification standards and provided comments to improve them. Through its staff's interactions with the FTCP, the Board raised the need for DOE to resolve deficiencies in its human factors program and the necessity of alleviating the shortage of qualified individuals to address human factors issues.

Quality Assurance Management. In addition to the Board's activities related to 2002-1, *Quality Assurance for Safety-Related Software*, the Board encouraged and provided feedback to the DOE efforts to improve Commercial Grade Dedication awareness and training within the department, and monitored the DOE Office of Environmental Management's Corporate Board devoted to continuous improvement of quality assurance program implementation. The Board conducted seven reviews in 2010 involving quality assurance, software quality assurance, and commercial-grade dedication. The Board issued a letter in March 2010 underscoring the issues with the flow down of quality assurance requirements to subcontractors and vendors.

Safety Culture Improvement Project. In FY 2008, DOE and its contractors established a jointly sponsored task team to develop tools for assessing and improving the safety culture of the federal and contractor workforces. In FY 2009 and early FY 2010, the tools developed by the task team were piloted at several DOE sites, and lessons learned were incorporated into the tools. Two recurring observations from the pilot efforts were that safety culture improvement must be a long-term initiative, and that a cadre of personnel knowledgeable on safety culture should be available to advise and support the sites during their efforts. As a result, the safety culture task team has been re-chartered to serve in that capacity. Safety culture improvement activities are expected to begin or continue at several DOE sites over the next few years. The Board has been closely observing the team's efforts and will continue to evaluate and encourage this effort as it continues to mature.

Chapter 3

CFO Letter, Auditor's Report and Financial Statements

CFO LETTER

I am pleased to report that the Board's FY 2010 financial statements received an unqualified opinion from its independent auditors, our fifth consecutive unqualified opinion since our FY2004 financial statements were initially audited pursuant to the Accountability of Tax Dollars Act (ATDA) of 2002. In addition, FY 2010 marked the third consecutive year that the Board's unqualified opinion was coupled with no instances of non-compliance with laws and regulations and no material internal control weaknesses identified in the accompanying report.

The financial statements that follow were prepared and audited as part of this performance and accountability report within 45 days after the end of the fiscal year. 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 and "contracts" (through an Interagency Agreement) with the General Services Administration (GSA) to act as its accounting services provider. The Board's financial staff worked diligently with our GSA accountants in preparing our FY 2010 financial statements and providing the necessary supporting documentation to our auditors, and credit should be given to both those organizations for achieving these accomplishments.

Compliance with Laws and Regulations

The auditors tested the Board's compliance with certain provisions of laws and regulations, non-compliance with which could have a direct and material effect on the determination of financial statement amounts, and certain other laws in regulations specified in OMB Bulletin 07-04, *Audit Requirements for Federal Financial Statements*. For the fourth consecutive year, the auditors found no instances of non-compliance with such laws or regulations.

Internal Controls

In planning and performing the financial statements audit, the independent auditors considered the Board's internal controls over financial reporting by obtaining an understanding of our internal controls, determining if internal controls had been placed in operation, assessing controls risk, and performing tests of controls. Testing of internal controls was limited to those controls necessary to achieve objectives described in OMB Bulletin 07-04. The auditors noted no internal control material weaknesses for the third consecutive year.

The auditor's report, together with the accompanying report on compliance with laws and regulations, and internal control are included in their entirety in this Chapter.



Brian Grosner, Chief Financial Officer



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INDEPENDENT AUDITOR'S REPORT

Chairman of the Board
Defense Nuclear Facilities Safety Board

We have audited the accompanying balance sheets of the Defense Nuclear Facilities Safety Board (DNFSB) as of September 30, 2010 and 2009, and the related statements of net cost, changes in net position, and budgetary resources for the years then ended. These financial statements are the responsibility of the DNFSB's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and Office of Management and Budget (OMB) Bulletin No. 07-04, *Audit Requirements for Federal Financial Statements*, as amended. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and the significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the DNFSB as of September 30, 2010 and 2009, and its net cost, changes in net position, and budgetary resources for the years then ended in conformity with accounting principles generally accepted in the United States of America.

In accordance with *Government Auditing Standards*, we have also issued our report dated October 29, 2010, on our consideration of the DNFSB's internal control over financial reporting and on our tests of its compliance with certain provisions of laws and regulations. The purpose of those reports are to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. Those reports are an integral part of an audit performed in accordance with *Government Auditing Standards* and should be considered in assessing the results of our audits.

Management's Discussion and Analysis (MD&A) and other accompanying information are not a required part of the DNFSB's basic financial statements but are supplementary information

FY 2010
DEFENSE NUCLEAR FACILITIES SAFETY BOARD
Performance and Accountability Report



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required by OMB Circular A-136, *Financial Reporting Requirements*, as amended, and the Federal Accounting Standards Advisory Board's Statement of Federal Financial Accounting Standards No. 15, *Management's Discussion and Analysis*. We made certain inquiries of management and compared the MD&A information with the DNFSB's audited financial statements and against other knowledge obtained during our audits. We also compared the other accompanying information with the audited financial statements. However, we did not audit the MD&A or other accompanying information and, therefore, express no opinion on them.

Lani Eko & Company, CPAs, PLLC

October 29, 2010
Alexandria, Virginia



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**INDEPENDENT AUDITOR'S REPORT ON
INTERNAL CONTROL OVER FINANCIAL REPORTING
AND ON COMPLIANCE AND OTHER MATTERS**

Chairman of the Board
Defense Nuclear Facilities Safety Board

We have audited the financial statements of the Defense Nuclear Facilities Safety Board (DNFSB) as of and for the years ended September 30, 2010 and 2009, and have issued our report thereon dated October 29, 2010. We conducted our audits in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and Office of Management and Budget (OMB) Bulletin No. 07-04, *Audit Requirements for Federal Financial Statements*, as amended.

Internal Control Over Financial Reporting

In planning and performing our audits, we considered the DNFSB's internal control over financial reporting as a basis for designing our auditing procedures, obtained an understanding of the design effectiveness of internal controls, determined whether the internal controls have been placed in operation, assessed control risk, and performed tests of the DNFSB's internal controls for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the DNFSB's internal control over financial reporting. Accordingly, we do not express an opinion on the effectiveness of DNFSB's internal control over financial reporting.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A *material weakness* is a deficiency, or combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the DNFSB's financial statements will not be prevented, or detected and corrected on a timely basis.

Our consideration of internal control over financial reporting was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over financial reporting that might be deficiencies, significant deficiencies or material weaknesses. We did not identify any deficiencies in internal control over financial reporting that we consider to be material weaknesses, as defined above.

Compliance and Other Matters

The management of DNFSB is responsible for complying with laws and regulations applicable to the DNFSB. As part of obtaining reasonable assurance about whether the

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DEFENSE NUCLEAR FACILITIES SAFETY BOARD
Performance and Accountability Report



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DNFSB's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of applicable laws and regulations and contracts, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards* or Office of Management and Budget (OMB) Bulletin No. 07-04, *Audit Requirements for Federal Financial Statements*, as amended.

We noted certain matters that we reported to management of DNFSB in a separate letter dated October 29, 2010.

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

Lani Eko & Company, CPAs, PLLC

October 29, 2010
Alexandria, VA



DEFENSE NUCLEAR FACILITIES SAFETY BOARD

APPROPRIATED FUND

FINANCIAL STATEMENTS

As Of and For The Years Ended September 30, 2010 and 2009

FY 2010
DEFENSE NUCLEAR FACILITIES SAFETY BOARD
Performance and Accountability Report

DEFENSE NUCLEAR FACILITY SAFETY BOARD

BALANCE SHEET

As Of September 30, 2010 and 2009

		2010	2009
Assets:			
Intragovernmental:			
Fund Balance With Treasury	(Note 2)	\$ 10,292,042	\$ 9,677,632
Other	(Note 3)		9
Total Intragovernmental		10,292,042	9,677,641
Accounts Receivable, net	(Note 4)	23,231	19,666
General Property, Plant and Equipment	(Note 5)	282,438	479,462
Total Assets		\$ 10,597,711	\$ 10,176,769
Liabilities:	(Note 6)		
Intragovernmental:			
Accounts Payable	(Note 7)	\$ 39,634	\$ 8,772
Employee Benefits	(Note 8)	195,816	142,918
Total Intragovernmental		235,450	151,691
Liabilities With the Public:			
Accounts Payable		727,232	751,113
Other:	(Note 9)		
Accrued Funded Payroll and Leave		1,008,265	921,482
Withholdings Payable		0	3
Unfunded Leave		987,623	904,000
Worker's Compensation	(Note 10)	0	4,243
Total Liabilities With the Public		2,723,120	2,580,841
Total Liabilities		2,958,570	2,732,532
Net Position:			
Unexpended Appropriations - Other Funds		8,321,095	8,683,910
Cumulative Results of Operations - Other Funds		(681,954)	(1,239,673)
Total Net Position		7,639,141	7,444,237
Total Liabilities and Net Position		\$ 10,597,711	\$ 10,176,769

*Amounts may be off by a dollar due to rounding.

*The accompanying notes are an integral
part of these statements.*

DEFENSE NUCLEAR FACILITY SAFETY BOARD
STATEMENT OF NET COST
 For The Years Ended September 30, 2010 and 2009

	2010	2009
Program Costs:		
DNFSB:		
Gross Costs (Note 12)	\$ 26,860,574	\$ 25,117,100
Net Program Costs	26,860,574	25,117,100
Net Cost of Operations	\$ 26,860,574	\$ 25,117,100

*Amounts may be off by a dollar due to rounding.

FY 2010
DEFENSE NUCLEAR FACILITIES SAFETY BOARD
Performance and Accountability Report

DEFENSE NUCLEAR FACILITIES SAFETY BOARD
STATEMENT OF CHANGES IN NET POSITION
For The Years Ended September 30, 2010 and 2009

	2010	2009
Cumulative Results of Operations:		
Beginning Balances	\$ (1,239,673)	\$ (1,156,000)
Adjustments:		
Corrections of Errors (+/-) (Note 13)	830,557	
Beginning Balances, as Adjusted	\$ (409,115)	\$ (1,156,000)
Budgetary Financing Sources:		
Appropriations Used	25,618,257	24,366,057
Other	(1,868)	
Other Financing Resources (Non-Exchange):		
Imputed Financing	971,346	667,370
Total Financing Sources	26,587,735	25,033,427
Net Cost of Operations (+/-)	26,860,574	25,117,100
Net Change	(272,839)	(83,673)
Cumulative Results of Operations	\$ (681,954)	\$ (1,239,673)
Unexpended Appropriations:		
Beginning Balances	\$ 8,683,910	\$ 8,049,967
Adjustments:		
Corrections of Errors (+/-) (Note 13)	(830,557)	
Beginning Balances, as Adjusted	\$ 7,853,353	\$ 8,049,967
Budgetary Financing Sources:		
Appropriations Received	26,086,000	25,000,000
Appropriations Used	(25,618,257)	(24,366,057)
Total Budgetary Financing Sources	467,743	633,943
Total Unexpended Appropriations	8,321,095	8,683,910
Net Position	\$ 7,639,141	\$ 7,444,237

*Amounts may be off by a dollar due to rounding.

FY 2010
DEFENSE NUCLEAR FACILITIES SAFETY BOARD
Performance and Accountability Report

DEFENSE NUCLEAR FACILITIES SAFETY BOARD
STATEMENT OF BUDGETARY RESOURCES
For The Years Ended September 30, 2010 and 2009

	2010	2009
Budgetary Resources:		
Unobligated Balance:		
Beginning of Period	\$ 3,851,686	\$ 3,250,056
Recoveries of Prior Year Obligations	479,484	448,277
Budget Authority:		
Appropriations Received	26,086,000	25,000,000
Earned		
Collected	1,698	16,017
Subtotal	\$ 26,087,698	\$ 25,016,017
Temporarily Not Available Pursuant to Public Law (-)		
Total Budgetary Resources	\$ 30,418,868	\$ 28,714,350
Status of Budgetary Resources:		
Obligations Incurred		
Direct (Note 14)	\$ 26,574,143	\$ 24,862,664
Subtotal	\$ 26,574,143	\$ 24,862,664
Unobligated Balances		
Apportioned	3,363,543	3,387,392
Subtotal	\$ 3,363,543	\$ 3,387,392
Unobligated Balances - Not Available	481,181	464,294
Total Status of Budgetary Resources	\$ 30,418,868	\$ 28,714,350
Change in Obligated Balances:		
Obligated Balance, Net:		
Unpaid Obligations, Brought Forward, October 1	\$ 5,825,946	\$ 5,470,610
Total, Unpaid Obligated Balance, Brought Forward, Net	\$ 5,825,946	\$ 5,470,610
Obligations Incurred	26,574,143	24,862,664
Gross Outlays (-)	(25,473,288)	(24,059,051)
Recoveries of Prior-Year Unpaid Obligations, Actual (-)	(479,484)	(448,277)
Obligated Balance, Net, End of Period:		
Unpaid Obligations (Note 15)	6,447,318	5,825,946
Total, Unpaid Obligated Balance, Net, End of Period	\$ 6,447,318	\$ 5,825,946
Net Outlays:		
Gross Outlays (+)	25,473,288	24,059,051
Offsetting Collections (-)	(1,698)	(16,017)
Net Outlays (Note 16)	\$ 25,471,590	\$ 24,043,034

*Amounts may be off by a dollar due to rounding.

The accompanying notes are an integral part of these statements.

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

APPROPRIATED FUND

Note 1 – Significant Accounting Policies

(a) Reporting Entity

The Defense Nuclear Facilities Safety Board (Board) is an independent Federal government agency with responsibility for the oversight of the Department of Energy (DOE)'s defense nuclear facilities located throughout the United States. The Board is directed by a Chairman and four members appointed by the President. The Board's mission as described by the Atomic Energy Act is to ensure that the public health and safety are adequately protected at the DOE defense nuclear facilities.

(b) Basis of Presentation

These financial statements have been prepared from the accounting records of the Board in accordance with generally accepted accounting principles (GAAP) as promulgated by the Federal Accounting Standards Advisory Board (FASAB) and Office of Management and Budget (OMB) Circular A-136 "Financial Reporting Requirements." GAAP for Federal entities is the hierarchy of accounting principles prescribed in the American Institute of Certified Public Accountants (AICPA) Statement on Auditing Standards No. 91, *Federal GAAP Hierarchy*.

Circular A-136 requires agencies to prepare principal statements, which include a Balance Sheet, a Statement of Net Cost, a Statement of Changes in Net Position, and a Statement of Budgetary Resources. The balance sheet presents, as of September 30, 2010, amounts of future economic benefits owned or managed by the Board (assets), amounts owed by the Board (liabilities), and amounts, which comprise the difference (net position). The Statement of Net Cost reports the full cost of the Board's operations and the Statement of Budgetary Resources reports Board's budgetary activity.

(c) Basis of Accounting

Transactions are recorded on the accrual accounting basis in accordance with OMB Circular A-136. 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.

(d) Revenues and Other Financing Sources

The Defense Nuclear Facilities Safety Board receives its funding needed to support its programs through congressional appropriations. Appropriated funds are received annually and remain available until expended (i.e., no year funds). None of the appropriations are “earmarked” funds. An imputed financing source is recognized to offset costs incurred by the Board and funded by another Federal source (see Notes 1(i) and 8).

(e) Assets and Liabilities

Intra-governmental assets and liabilities arise from transactions between the Board and other Federal entities.

Funds with the U.S. Treasury compose the majority of assets on the Board’s balance sheet. All other assets result from activity with non-federal sources.

Liabilities represent amounts that are likely to be paid by the Board as a result of transactions that have already occurred. The accounts payable portion of liabilities consist of amounts owed to federal agencies and commercial vendors for goods, services, and other expenses received but not yet paid.

Liabilities covered by budgetary or other resources are those liabilities of the Board for which Congress has appropriated funds, or funding is otherwise available to pay amounts due. Liabilities not covered by budgetary or other resources represent amounts owed in excess of available congressionally appropriated funds or other amounts. The liquidation of liabilities not covered by budgetary or other resources is dependent on future congressional appropriations or other funding.

(f) Fund Balance with the U.S Treasury

The U.S. Treasury processes the Board’s receipts and disbursements. Funds with the U.S. Treasury are cash balances from appropriations as of the fiscal year-end from which the Board is authorized to make expenditures and pay liabilities resulting from operational activity.

(g) Property, Plant, and Equipment (PPE)

PPE consists of capitalized equipment, furniture and fixtures, and software. There are no restrictions on the use or convertibility of property, plant, or equipment.

The Board capitalizes PPE with a useful life of at least two (2) years and individually costing more than \$10,000 (\$25,000 for leasehold improvements). Bulk purchases of lesser value items are capitalized when the cost is \$25,000 or greater.

Assets are depreciated on a straight-line basis over the estimated used life of the property. Information Technology (IT) equipment and software is depreciated over a useful life of three (3) years. All other equipment is depreciated over a five (5) year useful life. Furniture and fixtures are depreciated over a seven (7) year useful life and leasehold improvements over a ten (10) year useful life.

The Board owns no land and leases its office space from the General Services Administration. The lease costs approximate commercial lease rates for similar properties.

(h) Annual, Sick, and Other Leave

Annual leave is recognized as an expense and a liability as it is earned; the liability is reduced as leave is taken. The accrued leave liability is principally long-term in nature. Sick leave and other types of leave are expensed as leave is taken.

(i) Federal Employee Benefits

The Board recognizes its share of the cost of providing future pension benefits to eligible employees over the period of time that they render service to the Board. The pension expense recognized in the financial statement equals the current service cost for the Board's employees for the accounting period less the amount contributed by the employees. The Office of Personnel Management (OPM), the administrator of the plan, supplies the Board with factors to apply in the calculation of the service cost. These factors are derived through actuarial cost methods and assumptions. The excess of the recognized pension expense represents the amount being financed directly by OPM. This amount is considered imputed financing to the Board (see Note 8).

The Board recognizes a current-period expense for the future cost of postretirement health benefits and life insurance for its employees while they are still working. The Board accounts for and reports this expense in a manner similar to that used for pensions, with the exception that employees and the Board do not make current contributions to fund these future benefits.

Federal employee benefit costs paid by OPM and imputed to the Board are reported as a resource on the Statement of Changes in Net Position.

(j) Contingencies

The Board has no material pending claims or lawsuits against it. Management believes that losses from other claims or lawsuits, not yet known to management, are possible, but would not likely be material to the fair presentation of the Board's financial statements. Thus, there is no provision for such losses in its statements. The Board has not entered into any contractual arrangements which may require future financial obligations.

Note 2 – Funds Balance with the U.S. Treasury

The Board’s funds with the U.S. Treasury consist only of appropriated funds. Worksheet adjustments were made for credits of \$6,152 and \$813 for FY 2010 and FY 2009, respectively, for payroll charges that were reflected in the U.S. Treasury cash balance at year end but were not yet recorded in the GSA accounting system. The status of these funds as of September 30, 2010 and 2009 are as follows:

	<u>FY 2010</u>	<u>FY 2009</u>
A. Fund Balance with Treasury	\$10,292,042	\$9,677,632
Appropriated Fund		
B. Status of Fund Balance with Treasury		
1) Unobligated Balance	3,363,543	3,387,392
(a) Available	481,181	464,294
2) Obligated Balance not yet Disbursed	<u>6,447,318</u>	<u>5,825,946</u>
Total	\$10,292,042	\$9,677,632

Note 3 – Other Assets

The FY 2009 Other Assets amount represents an unliquidated advance.

	FY 2010	FY 2009
Intragovernmental	\$0	\$0
With the Public – Associates	\$0	\$9
Total Other Assets	\$0	\$9

Note 4 – Accounts Receivable, Net

The line item represents the gross amount of monies owed to the Board. The Board has historically collected receivables due and thus has not established an allowance for uncollectible accounts.

Accounts Receivable	FY 2010	FY 2009
Claims	\$23,231	\$19,666

Note 5 - General Property, Plant and Equipment, Net

The Board's total cost, accumulated depreciation, and net book value for PPE for the years ending September 30, 2010 and 2009 are as follows.

2010	Equipment	Furniture & Fixtures	Software	Software in Development	Total
Cost	\$840,395	\$52,644	\$531,104	\$26,240	\$1,450,383
Accum. Depr.	(689,943)	(52,644)	(425,359)	(0)	(1,167,946)
Net Book Value	\$150,452	\$ 0	\$105,745	\$26,240	\$ 282,438*

*Rounding

2009	Equipment	Furniture & Fixtures	Software	Total
Cost	\$935,609	\$52,644	\$530,006	\$1,518,259
Accum. Depr.	(657,837)	(52,644)	(328,316)	(1,038,797)
Net Book Value	\$277,772	\$ 0	\$201,690	\$ 479,462

Note 6 – Liabilities Not Covered by Budgetary Resources

The liabilities on the Board's Balance Sheets as of September 30, 2010 and 2009 include liabilities not covered by budgetary resources, which are liabilities for which congressional action is needed before budgetary resources can be provided. Although future appropriations to fund these liabilities are likely and anticipated, it is not certain that appropriations will be enacted to fund these liabilities. The composition of liabilities not covered by budgetary resources as of September 30, 2010 and 2009 is as follows:

	<u>2010</u>	<u>2009</u>
Unfunded Leave	\$ 987,623	\$ 904,000
<u>Workers' Compensation</u>	\$ 0	<u>\$ 4,243</u>
Total liabilities not covered by budgetary resources	\$ 987,623	\$ 908,243
<u>Total liabilities covered by budgetary resources</u>	<u>\$1,970,947</u>	<u>\$1,824,289</u>
Total Liabilities	\$2,958,570	\$2,732,532

Note 7 - Intragovernmental Liabilities

Intragovernmental liabilities arise from transactions with other federal entities. Of the FY 2010 accounts payable intragovernmental liabilities, \$6,961 is with GSA and the balance of \$32,673 is with OPM. Of the FY 2009 accounts payable intragovernmental liabilities, \$1,703 is with GSA and the balance of \$7,069 is with OPM. Employee benefits are the amounts owed to OPM and Treasury as of September 30, 2010 and 2009 for Federal Employees Health Benefits Program (FEHBP), Federal Employees' Group Life Insurance Program (FEGSIP), Federal Insurance Contributions Act (FICA), Federal Employees Retirement System (FERS), and Civil Service Retirement System (CSRS) contributions (reference Note 8).

Note 8 – Federal Employee Benefits

All permanent employees participate in the contributory CSRS or FERS. FERS employees are covered under FICA. To the extent that employees are covered by FICA, the taxes they pay to the program and the benefits they will eventually receive are not recognized by the Board's financial statements. The Board makes contributions to CSRS, FERS and FICA and matches certain employee contributions to the thrift savings component of FERS. All of these payments are recognized as operating expenses.

In addition, all permanent employees are eligible to participate in the contributory FEHBP and FEGSIP and may continue to participate after retirement. The Board makes contributions through the OPM to FEHBP and FEGSIP for active employees to pay for current benefits; these contributions are recognized as operating expenses. The Board does not report on its financial statements these programs' assets, accumulated plan benefits or unfunded liabilities, if any, applicable to its employees. Reporting such amounts is the responsibility of OPM; however, the financing of these costs by OPM and imputed to the Board are reported on the Statement of Changes in Net Position.

Employee benefits liabilities are current (versus non-current liabilities).

Note 9– Other Liabilities

Other liabilities with the public for the years ending September 30, 2010 and 2009 consist of Accrued Funded Payroll and Leave, Withholdings Payable and Unfunded Leave in the amounts shown below:

	With the Public	Non-Current	Current	Total
2010	Other Liabilities	\$987,623	\$1,008,265	\$1,995,888
2009	Other Liabilities	\$904,000	\$921,485	\$1,825,485

Note 10 – Workers’ Compensation

The Federal Employees’ Compensation Act (FECA) provides income and medical cost protection to covered federal civilian employees injured on the job, employees who have incurred a work-related disease, and beneficiaries of employees whose death is attributable to a job-related injury or occupational disease. Claims incurred for benefits for Board employees under FECA are administered by the Department of Labor and are paid, ultimately, by the Board.

The Board recorded an estimated liability for claims incurred, but not reported as of September 30, 2010 and 2009, as follows:

	FY 2010	FY 2009
Workers’ Compensation	\$0	\$4,243

Note 11 – Leases

The Board has not entered into any existing capital leases and thus has incurred no liability resulting from such leases. The Board’s one operating lease is for headquarters office space from GSA. Lease costs for office space for FY 2010 and FY 2009 under the terms of its leases amounted to \$2,174,341 and \$2,190,193, respectively. The Board entered into a new ten (10) year lease agreement effective March 8, 2006. Estimated future minimum lease payments under the terms of the lease are as follows:

Fiscal Year Ending September 30	Payment
2011	\$ 2,256,016
2012	\$ 2,218,113
2013	\$ 2,355,130
2014	\$ 2,391,445
2015	\$ 2,428,849
2016 (through March 7)	\$ 1,018,594
Total Estimated Future Lease Payments	\$12,668,147

Note 12 – Intragovernmental Costs

The portion of the Board’s program costs (note as the Board earns no revenue from its operations, gross and net costs are identical) related to Intragovernmental Costs and Costs with the Public are shown as follows. Intragovernmental Costs are costs incurred from exchange

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transactions with other federal entities (e.g., building lease payments to GSA). Costs with the Public are incurred from exchanged transactions with non-federal entities (i.e., all other program costs).

	Intragovernmental Costs	Costs with the Public	Total Program Costs
FY 2010	\$4,057,394	\$22,803,180	\$26,860,574
FY 2009	\$3,885,602	\$21,231,498	\$25,117,100

The Board's program costs/net cost of operations by OMB Object Class (OC) are as follows:

OC	Description	FY 2010	FY 2009
11	Personnel Compensation	\$14,273,538	\$13,403,661
12	Personnel Benefits	\$ 4,930,046	\$ 4,274,093
13	Former Personnel Benefits	\$ (5,065)	
21	Travel & Transportation of Persons	\$ 996,112	\$ 956,570
22	Transportation of Things	\$ 54,327	\$ 66,866
23	Rent, Communications, & Utilities	\$ 2,370,329	\$ 2,374,947
24	Printing & Reproduction	\$ 20,061	\$ 18,686
25	Other Contractual Services	\$ 3,407,177	\$ 3,291,946
26	Supplies & Materials	\$ 297,319	\$ 252,417
31	Acquisition of Assets	\$ 516,730	\$ 477,914
	Total	\$26,860,574	\$25,117,100

Note 13 – Correction to Beginning Balances in Statement of Changes in Net Position

The correction adjusted the beginning balances of Cumulative Results of Operations and Unexpended Appropriations to reflect past year transactions that were inadvertently not recorded as Unexpended Appropriations Used, thereby also reducing Unexpended Appropriations. There is no impact on the Board's Net Position in prior years.

Note 14 – Apportionment Categories of Obligations Incurred

The Board is subject to apportionment. All obligations are incurred against Category A (budgetary resources are distributed by fiscal year quarter) amounts apportioned on the latest Standard Form (SF)-132, *Apportionment and Reapportionment Schedule*.

	FY 2010	FY 2009
Direct		
Category A	\$26,574,143	\$24,862,664

Note 15 – Undelivered Orders at the End of the Period

The amount of Unpaid Obligated Balance, Net, End of Period shown on the Statement of Budgetary Resources includes obligations relating to Undelivered Orders (goods and services contracted for but not yet received at the end of the year) and Accounts Payable (amounts owed at the end of the year by the Board for goods and services received). The amount of each is as follows:

	Undelivered Orders	Accounts Payable	Unpaid Obl. Balance, Net
FY 2010	\$4,476,371	\$1,970,947	\$6,447,318
FY 2009	\$4,001,658	\$1,824,288	\$5,825,946

Note 16 – Explanation of Differences between the Statement of Budgetary Resources and the Budget of the United States Government

Budgetary resources made available to the Board include current appropriations, unobligated appropriations and recoveries of prior year obligations. For fiscal year 2009, no material differences exist between the amounts on the Statements of Budgetary Resource and the amounts in the fiscal year 2011 President’s Budget which are rounded to the nearest million. As the FY 2012 President’s Budget is not yet available, comparison between the Statement of Budgetary Resources and the actual FY 2010 data in the FY 2012 Budget cannot be performed.

Note 17 – 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

The Change in Components Requiring or Generating Resources in Future Periods equals the difference between the opening and ending balances of Liabilities Not Covered by Budgetary Resources (as shown on the Balance Sheet, reference Note 6), shown as follows:

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FY 2010

	FY 2009	FY 2010	Change
Unfunded Annual Leave	\$904,000	\$987,623	\$83,623
Workers Compensation	\$ 4,243	\$ 0	(\$ 4,243)
Total	\$908,243	\$987,623	\$79,380

FY 2009

	FY 2008	FY 2009	Change
Unfunded Annual Leave	\$871,316	\$904,000	\$32,684
Workers Compensation	\$ 7,523	\$ 4,243	(\$ 3,280)
Total	\$878,839	\$908,243	\$29,404

Note accrued funded payroll liability is covered by budgetary resources and is included in the net cost of operations, whereas unfunded annual 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.

Note 18 – Reconciliation of Net Cost of Operations (proprietary) to Budget

Budgetary resources obligated are obligations for personnel, goods, services, benefits, etc. made by Board in order to conduct operations or acquire assets. Other (i.e., non-budgetary) financing resources are also utilized by Board in its program (proprietary) operations. For example, spending authority from offsetting collections and recoveries are financial resources from the recoveries of prior year obligations (e.g., the completion of a contract where not all the funds were used) and refunds or other collections (i.e., funds used to conduct operations that were previously budgeted). As explained in Notes 1(i) and 8, an imputed financing source is recognized for future federal employee benefits costs incurred for Board employees that will be funded by OPM. Changes in budgetary resources obligated for goods, services, and benefits ordered by not yet provided represents the difference between the beginning and ending balances of undelivered orders (i.e., good and services received during the year based on obligations incurred the prior year represent a cost of operations not funded from budgetary resources). Resources that finance the acquisition of assets are budgetary resources used to finance assets and not cost of operations (e.g., increases in accounts receivables or capitalized assets). Financing sources yet to be provided represents financing that will be provided in future periods for future costs that are recognized in determining the net cost of operations for the present period. Finally, components not requiring or generating resources are costs included in the net cost of operations that do not require resources (e.g., depreciation and amortized expenses of assets previously capitalized).

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A reconciliation between budgetary resources obligated and net cost of operations (i.e., providing an explanation between budgetary and financial (proprietary) accounting) is as follows (note: in prior years this information was presented as a separate financial statement (the Statement of Financing)):

	FY 2010	FY 2009
Budgetary Resources Obligated	\$26,574,143	\$24,862,664
Spending Authority from Recoveries and Offsetting Collections	(481,181)	(464,294)
Imputed Financing from Costs Absorbed by Others	971,346	667,370
Changes in Budgetary Resources Obligated for Goods, Services, and Benefits Ordered but Not Yet Provided	(474,705)	(35,638)
Resources that Finance the Acquisition of Assets	(78,384)	(207,571)
Financing Sources Yet to be Provided (see Note 17)	79,380	29,404
Components Not Requiring or Generating Resources	269,975	265,165
Net Cost of Operations	\$26,860,574	\$25,117,100

APPENDIX A: LIST OF ABBREVIATIONS AND ACRONYMS

C&A	Certification & Accreditation
CD	Critical Decision
CFR	Code of Federal Regulations
CY	Calendar Year
CMRR	Chemistry and Metallurgy Research Replacement
DAF	Device Assembly Facility
DNFSB	Defense Nuclear Facilities Safety Board
DOE	(U.S.) Department of Energy
FASAB	Federal Accounting Standards Advisory Board
FBWT	Fund Balance with Treasury
FISMA	Federal Information Security Management Act
FMFIA	Federal Managers Financial Integrity Act of 1982
FTCP	Federal Technical Capability Program
FTE	Full-Time Equivalent
FY	Fiscal Year
GAAP	Generally Accepted Accounting Principles
GSA	General Services Administration
GPRA	Government Performance and Results Act
HEPA	High-Efficiency Particulate Air (filter)
HLW	High-Level Waste
INL	Idaho National Laboratory
ISM	Integrated Safety Management
JCO	Justification for Continuing Operation
LANL	Los Alamos National Laboratory
LLNL	Lawrence Livermore National Laboratory
NCS	Nuclear Criticality Safety
NNSA	National Nuclear Security Administration
NTS	Nevada Test Site
NES	Nuclear Explosive Safety
OMB	Office of Management and Budget
OPM	Office of Personnel Management
ORNL	Oak Ridge National Laboratory
PAR	Performance and Accountability Report
PDP	Professional Development Program
PFP	Plutonium Finishing Plant
SNL	Sandia National Laboratories
SRS	Savannah River Site
SSC	Structures, Systems and Components
WIPP	Waste Isolation Pilot Plant
WTP	Waste Treatment and Immobilization Plant (at Hanford)
Y-12	Y-12 National Security Complex