



**REPORT TO CONGRESS ON THE  
ORGANIZATION AND OPERATIONS  
OF THE  
NATIONAL NUCLEAR SECURITY  
ADMINISTRATION**



Pursuant to  
Title 32 of the National Defense Authorization Act  
for Fiscal Year 2000 and  
Section 3153 of the National Defense Authorization Act  
for Fiscal Year 2001

February 25, 2002

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## Introduction from the Administrator

On May 3, 2001, I submitted NNSA's *Report to Congress on the Plan for Organizing the National Nuclear Security Administration*. It was prepared pursuant to Section 3153 of the National Defense Authorization Act for Fiscal Year 2001, which called upon the Administrator to submit "a plan for assigning roles and responsibilities to and among the headquarters and field organizational units of the National Nuclear Security Administration."

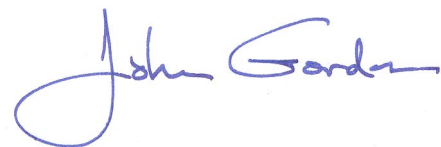
That *May Report* contained the first phase of a comprehensive strategy designed to help NNSA become a fully operational, semiautonomous agency, as envisioned in our enabling legislation. It also outlined our strategy for a second phase, in which we would implement a plan for ensuring that our headquarters and field elements work in concert and with clarity concerning their respective roles and responsibilities.

This *Organization Report* describes not only "a plan for assigning roles and responsibilities to and among the headquarters and field organizational units" but also our overall strategy for operating an integrated national nuclear security enterprise. It summarizes our strategic plan, provides a detailed plan for resolving roles and responsibilities, and discusses our objectives for each organizational component in fiscal year 2002 and beyond.

Part 1 summarizes our strategic and organizational plans. NNSA has developed its strategic plan in concert with its organizational design. This report details how we intend to resolve the long-standing, complex issues concerning roles and responsibilities by clarifying accountability, improving integration, and reducing administrative burdens. It describes our key initiatives for accomplishing these objectives and identifies milestones for implementing our plan over the next year.

Part 2 describes plans for operating the NNSA—providing the objectives and strategies of each organizational component, accomplishments over the past year, and plans for fiscal year 2002 and beyond. We have made solid progress both toward establishing an *effective* and *efficient* NNSA organization and in performing our core missions.

I believe that this *Organization Report* demonstrates that we are on the right path to achieving our vision of an integrated nuclear security enterprise operating an efficient and agile nuclear weapons complex, recognized as preeminent in technical leadership and program management.



February 25, 2002

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## Preface

This *Report to Congress on the Organization and Operations of the National Nuclear Security Administration* describes NNSA's plans for assigning roles and responsibilities to headquarters and field units, as well as an overall strategy for operating an integrated national nuclear security enterprise. The main body of the report includes a summary of the NNSA strategic plan and our corporate strategy for improving performance.

While the Naval Reactors work plan is included in this *Organization Report*, management of that NNSA component will not be modified by the activities described below. This is consistent with the clear intent of the Congress that the establishment of NNSA not alter the responsibilities of the Deputy Administrator for Naval Reactors. The unique organizational structure of Naval Reactors (with separate reporting responsibilities to NNSA and the Department of the Navy) and its outstanding record of performance exempt it from the planned reengineering.

The terrorist attacks of September 11, 2001, gave a renewed sense of urgency to ensuring that the NNSA is rapidly transformed into an organization capable of operating at peak effectiveness. Following those attacks, the Administrator established a series of task forces to improve the security of the NNSA complex and to maximize the ability of the NNSA to support other organizations in their counterterrorism mission. As part of the reengineering described in the report, the NNSA Management Council will ensure that internal processes are optimized for support to this emerging and urgent national security mission.

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## Executive Summary of Part 1

### Strategic Plan – Create an Integrated Nuclear Security Enterprise

NNSA’s strategic plan is a key part of our effort to create an integrated nuclear security enterprise. This report contains a summary of that plan, which was developed over the past year in coordination with the organizational changes discussed in this report. It describes the values that will guide us, the missions that we will accomplish, the vision that we will reach for, and the goals that we will strive to achieve.

#### Our Core Values

As beneficiaries of a proud heritage dating from the Manhattan Project, NNSA is building an enduring legacy by identifying and embracing its core values: **Excellence, Integrity, Respect, and Teamwork**. NNSA will earn **public trust** by practicing these core values.

#### Our Mission

*To Strengthen United States Security through the Military Applications of Nuclear Energy and by Reducing the Global Threat from Terrorism and Weapons of Mass Destruction.*

These functions are now integrated into one organization to secure strong management and to improve business practices. Our mission statement includes all mandates contained in the six missions listed in the NNSA Act.<sup>1</sup>

#### Our Vision

*To Be an Integrated Nuclear Security Enterprise Operating an Efficient and Agile Nuclear Weapons Complex, Recognized as Preeminent in Technical Leadership and Program Management.*

Our vision is consistent with our determination to improve our business practices and responds to the intent of the Congress in creating the National Nuclear Security Administration.

#### The Issues We Face

NNSA faces key challenges in responding to evolving requirements and in maintaining and improving the health of the nation’s nuclear security enterprise. The expanded focus on international terrorism following the September 11, 2001, attacks underscores the importance of maintaining a strong national capability in the science and technology of nuclear security.

President Bush is seeking to transform our national security strategy to meet the threats of the 21<sup>st</sup> century. It is not enough to plan for large conventional wars in distant theaters; the

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<sup>1</sup> 50 United States Code (U.S.C.) § 2401.

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United States must also identify the capabilities required to detect, deter, and defeat adversaries who rely on surprise and deception to achieve their objectives. NNSA plays a key role in developing U.S. capabilities to detect and deter.

While we cannot predict with certainty the evolution of U.S. national security strategy, our ability to perform NNSA's core functions depends on continuously renewing our internal capabilities, in terms of both people and plant. Key scientists and engineers who perfected their specialized skills in both nuclear weapons development and detection during the era of underground nuclear testing continue to retire, and their skills and technical insight must be replaced. In addition, our physical plant infrastructure continues to erode, in some cases to the point that we are no longer able to perform some essential tasks.

It is imperative that we address these issues now. We no longer have the luxury of deferring this renewal to a later date without significant impact on our ability to accomplish our mission.

## **Our Strategic Goals**

Over the past year, NNSA has established five strategic goals and developed an organizational plan aligned to these goals. NNSA's goals demand continuous improvement, from planning through program execution:

- Goal 1:** Maintain and enhance the safety, security, and reliability of the nation's nuclear weapons stockpile to counter the threats of the 21<sup>st</sup> century.
- Goal 2:** Detect, prevent, and reverse the proliferation of weapons of mass destruction while promoting nuclear safety worldwide.
- Goal 3:** Provide the Navy with safe, militarily effective nuclear propulsion plants, and ensure their continued safe and reliable operation.
- Goal 4:** Ensure the vitality and readiness of the NNSA's nuclear security enterprise.
- Goal 5:** Create a well-managed, responsive, and accountable organization.

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## Organizational Plan – Corporate Strategy for Improving Effectiveness and Efficiency

This report describes NNSA's organizational accomplishments over the past nine months and its strategy for improving *efficiency* and *effectiveness*. NNSA is seeking to achieve these twin goals through (1) increasing organizational discipline and accountability by clearly defining authorities and responsibilities, (2) achieving enterprise-wide integration of its activities, and (3) lifting the administrative burdens on the people performing mission work.

### Organizational Accomplishments

Since transmitting the *May Report* to Congress, NNSA:

1. Implemented its new organizational structure that consolidates headquarters support functions.
2. Installed a leadership team responsible for mission performance and driving organizational improvement.
3. Began integrating NNSA decision making through the Management Council.
4. Adopted the Planning, Programming, Budgeting, and Evaluation system as NNSA's core business process.
5. Further defined NNSA's relationship with the Department of Energy (DOE) through streamlining external oversight and establishing an independent federal human resource management capability.
6. Resolved the key organizational issues left unanswered by the *May Report*.
7. Refined NNSA's strategy for achieving an *effective* and *efficient* organization.

### NNSA has implemented the new headquarters organization

The new organization consolidates NNSA support functions—previously located in the program components—with the goals of improving service and freeing program organizations to focus on mission performance.

### Leadership is in place

The Administrator assembled a management team to drive mission performance and lead organizational improvement efforts. In May 2001, the Administrator appointed an acting Principal Deputy Administrator and acting heads of the two new components, Facilities and Operations (F&O) and Management and Administration (M&A). Leaders for each of the first-tier subcomponents of these support organizations were also identified. The President, on recommendation of the Administrator and the Secretary of Energy, nominated Deputy Administrators for Defense Programs (DP) and Defense Nuclear Nonproliferation (NN), and the Senate has confirmed both Deputies.

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## Management Council is operating

The NNSA Management Council has been established and meets twice a week to deal promptly with crosscutting issues and to identify opportunities for synergy across NNSA components. It is the mechanism for high-level integration and dispute resolution, and it will approve all crosscutting policies and directives.

Among the key accomplishments of the Management Council since its inception in May 2001, it drove organizational restructuring; directed staff redeployment, based on the *May Report*; approved new business processes; and established an independent federal human resource capability.

The Management Council is currently and will continue to:

- Provide the penultimate forum for discussions and decisions regarding priorities among NNSA programs.
- Set staffing levels for each NNSA federal element.
- Review and comment on major crosscutting NNSA initiatives prior to decisions by the Administrator.
- Review and approve NNSA-wide policies, directives, guidance, and procedures.
- Coordinate NNSA responses to DOE taskings and directives.
- Provide leadership for, and track implementation of, the management initiatives contained in this *Organization Report*.
- Integrate key issues between headquarters and field elements and across NNSA sites by including the eight NNSA Site Office managers in expanded Management Council meetings on a regular basis.

## NNSA has begun using an integrated Planning, Programming, Budgeting, and Evaluation (PPBE) system

Over the next year, the PPBE system will become the core business process for managing the NNSA. The key features of the system include:

- **Multiyear planning and budgeting system.** The PPBE system allows NNSA managers to evaluate trade-offs between activities over a five-year period.
- **Documented planning hierarchy.** NNSA will connect strategic planning to execution through integrated program plans, five-year budget plans, and annual operating plans.
- **Appropriate use of field, laboratory, and plant expertise in planning.** The PPBE process requires extensive involvement of field, laboratory, and facility organizations, with added emphasis on program execution and evaluation.

NNSA has begun using the PPBE system for each of the three budget years currently in execution or preparation:



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- For fiscal year (FY) 2002, the plan for managing enacted appropriations reflects integrated NNSA PPBE processes for financial execution, closely tied to milestones and deliverables contained in work authorizations.
  - The FY 2003 budget was developed in a unified manner, involving a review by the Office of Management and Budget (OMB), with input from Department of Defense (DoD) regarding NNSA's weapons-related requirements and associated budgets.
  - The FY 2004 budget cycle is under way. NNSA generated draft strategic guidance in October, and each program component is currently developing an integrated plan. Five-Year Program and Fiscal Guidance will be issued in February, beginning the "programming" step in the NNSA PPBE process.

NNSA is on track to deliver an FY 2004 budget to the Congress that fully meets the congressional intent of having a PPBE system driving the resource decision process.

### **NNSA's "semiautonomous" relationship with DOE is being clarified**

Since May, NNSA has taken steps to implement its statutory status as a "separately organized agency":<sup>2</sup>

- With the approval of the Secretary, NNSA established an Executive Resource Board, providing for the selection, promotion, and development of the executive workforce and leadership of the NNSA.
- The Secretary assigned the Office of Independent Oversight and Performance Assurance (OA) the responsibility to consolidate DOE's independent oversight of the NNSA and to support the Administrator in the areas of environment, safety, and health, as well as safeguards, security, cyber security, and emergency management.

### **NNSA has resolved the issues left open in the *May Report***

In the *May Report*, NNSA committed to reviewing these four issues: (1) the line of authority and accountability for managing programs; (2) the roles and responsibilities for safety, security, and funding for NNSA facilities; (3) the structure of NNSA's field elements (including Operations and Area Offices) and the reporting relationships to headquarters program and support components; and (4) the powers invested in line functions versus staff functions.

NNSA has taken the following steps to resolve these four issues and to improve both mission *effectiveness* and organizational *efficiency*:

- NNSA has chosen a model for organizing its field structure that eliminates a layer of management and provides criteria for redeploying federal staff.
- NNSA has defined key reporting relationships. Fundamentally, the laboratories, production plants, and test site contractors report to the Administrator through a contracting officer who is also an NNSA Site Office manager.

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<sup>2</sup> 50 U.S.C. § 2401.

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- NNSA has defined the lines of authority for managing programs by delegating responsibility to the Program Deputy Administrators (DP and NN) for integrating all aspects of their assigned missions.
  - NNSA has clarified the roles of headquarters organizations, particularly in regard to facilities. The Associate Administrators tasked with key support functions will be empowered advocates for weapons complex stewardship and business improvement, not line managers.
  - NNSA has resolved the so-called “two headquarters” problem by adopting guidelines for activities that will be performed by headquarters and field elements (federal and contractor).
  - The NNSA Administrator will issue written delegations and defined tasking protocols outlining the powers invested in federal line and staff officers.

### **NNSA has developed a strategy for improving effectiveness and efficiency**

NNSA has identified three objectives to guide its overall corporate strategy for improving performance:

- Increase organizational discipline and accountability by defining authorities and responsibilities.
- Achieve enterprise-wide integration.
- Lift administrative burdens through streamlining policies, procedures, and staffing.

NNSA’s strategies for achieving these three objectives are summarized below.

### **Increase Organizational Discipline and Accountability by Defining Authorities and Responsibilities**

Increasing organizational discipline and improving accountability require NNSA to specify reporting chains, authorities, and responsibilities.

#### **Organizational principles**

A few key principles define NNSA’s strategy for increasing discipline and accountability:

- Federal officials determine requirements—what is needed.
- Laboratory, production plant, and other contractors deliver the product—the what—and manage how it is achieved.
- The lead role for each activity is performed in only one place.
- Place is determined by expertise.
- Direction is integrated across the organization before being delivered.

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### **NNSA’s tasking is based on formal delegations and contracting procedures**

- Direction within the federal family will be delivered only through a program direction channel created by formal delegations of authority from the Administrator.
- Federal program direction to the laboratories, production plants, and test site will be delivered only by a warranted contracting officer (CO) or by a designated contracting officer’s representative (COR).

These rules formally preclude staff or oversight components from tasking contractor personnel.

### **NNSA has defined an operating model with two basic approaches for managing work**

For weapons production and site management activities, day-to-day federal program management will be located close to the contractor. For research, development, and nonproliferation activities, federal responsibilities for program planning and management will, in most cases, be located at headquarters.

### **NNSA has defined specific roles for Site Offices and Service Centers**

Each NNSA Site Office will have primary responsibility for day-to-day program and contract administration for its assigned facility. These duties include agreeing to the overall safety and security parameters within which the contractor is authorized to operate.

Over the next year, current Operations Offices in Albuquerque, Las Vegas, and Oakland will be reengineered and transformed, as appropriate, into Service Centers that will provide the support required to maintain the eight NNSA Site Offices. The functions of these centers will be consolidated as appropriate for *effectiveness* and *efficiency*.

### **NNSA will redesign the federal-contractor relationship to improve accountability**

- Federal employees, with contractor input, will establish broad program objectives and goals.
- Contractors, in consultation with federal employees, will be given the flexibility to execute programs efficiently and will be held accountable for meeting those objectives and goals.

Based on these principles, NNSA will develop and implement a simpler, less adversarial contracting model that capitalizes on the private-sector expertise and experience of its contractors while simultaneously increasing contractor accountability for high performance and responsiveness.

NNSA has adopted a two-phased approach to this effort. The first phase involves reducing requirements in excess of those mandated by law and regulation within the context of the existing contract for the management and operation of Sandia National Laboratories (SNL). The second phase will develop a “Model for Improving Management and Performance” that can ultimately be implemented across the complex.

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## **Achieve Enterprise-Wide Integration**

NNSA's approach to integration involves:

- Adopting the Planning, Programming, Budgeting, and Evaluation system as the core business process for managing the enterprise.
- Preparing integrated program plans through teamwork and coordination between program and support components.
- Empowering the NNSA Management Council to resolve disputes.
- Directing the Principal Deputy Administrator to devote significant management attention to dispute resolution and to clearing away administrative roadblocks.
- Recognizing that the Administrator possesses the ultimate responsibility for integrating NNSA's activities.

### **NNSA will accomplish integrated planning through representation, communication, and teamwork**

NNSA is establishing integrated planning groups tied to the Planning, Programming, Budgeting, and Evaluation system. Each Deputy and Associate Administrator will be responsible for preparing an integrated plan for the activities assigned to his or her organization, based on detailed plans developed, for the most part, by the laboratories, production plants, and test site.

### **Resolving organizational tension through decision-making protocol**

NNSA has established a clear protocol for resolving the constructive tensions created by the organization plan. First, staffs from the program and support components work as a team to create integrated program plans. Program Deputies are responsible for resolving tensions within their components, and they work with their peers—primarily the Associate Administrators—on issues that cross component boundaries, such as personnel, infrastructure, and security. The next step is the Management Council. The Administrator is the ultimate arbiter of organizational tensions.

### **Lift Administrative Burdens through Streamlining Policies, Procedures, and Staffing**

NNSA is seeking to enhance its overall *effectiveness* and *efficiency* by:

- Clarifying and simplifying requirements.
- Streamlining and reducing oversight with minimal workload impact.
- Empowering expertise in the laboratories and production plants.
- Holding site contractors accountable for performance in compliance with clear expectations.

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- Employing work processes that maximize individual and team productivity, consistent with mission focus, and environment, safety, and health, and safeguards and security compliance.

### **NNSA is simplifying requirements and streamlining oversight**

- NNSA will simplify requirements by eliminating unnecessary details regarding how a task is to be accomplished from policy, guidance, orders, and other directions and by implementing contract reform that relies on commercial standards and external regulations, rather than self-generated burdens.
- NNSA will streamline oversight by clarifying NNSA authorities and responsibilities, coordinating with DOE and other external overseers, evaluating systems—not transactions, and redefining federal jobs.

### **NNSA is reengineering core business processes**

Over the next year, NNSA is undertaking a systematic reengineering campaign. The intent is to eliminate unnecessary or overlapping work at federal headquarters and field elements. By combining the data from (1) the most burdensome administrative requirements from the laboratories and facilities, (2) the best-practices benchmarking study, (3) the new contracting strategy, and (4) the model for restructuring field operations, NNSA is prepared to systematically reengineer its business processes. To overcome resistance to reengineering, NNSA will complete the following prerequisites:

- Create a leadership coalition committed to bringing about the change.
- Develop an integrated reengineering plan for the next year.
- Recognize that institutional changes require time.
- Apply adequate resources.
- Communicate with—and involve—employees.

### **NNSA will reinvigorate and rightsize federal staff**

Our plan is to:

- Redeploy and retrain staffs that are not performing core functions defined by the reengineering.
- Encourage higher-than-average attrition in selected areas through targeted buyout and early retirement offerings.
- Employ incentives to encourage career development, training, and retention of highly skilled employees.
- Provide the federal oversight mandated by Congress in specific areas such as nonproliferation.

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## **Path Forward**

Implementing the new initiatives outlined in this report is the task ahead, and NNSA leadership recognizes that implementation will require a change in the corporate culture. Behavior must line up with the new structure and procedures if the desired *effectiveness* and *efficiency* are to be obtained. Fundamentally, the path forward to a new organizational culture involves the following:

- Communicating the importance of changing behavior to achieve the desired results.
- Involving employees in the process of creating the desired future.
- Leadership modeling the behavior desired from employees.
- Clear, consistent accountability for both positive and negative behavior.

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**PART 1**

**STRATEGIC AND ORGANIZATIONAL PLANS:**

**CREATE AN INTEGRATED  
NUCLEAR SECURITY ENTERPRISE  
AND  
IMPROVE EFFECTIVENESS AND EFFICIENCY**

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## Chapter I

### Strategic Plan – Create an Integrated Nuclear Security Enterprise

NNSA's strategic plan is a key part of our effort to create an integrated nuclear security enterprise. This chapter summarizes the NNSA strategic plan that has been developed over the past year in coordination with the planned organizational changes described in this report. It describes the values that will guide us, the missions that we will accomplish, the vision that we will reach for, and the goals that we will strive to achieve. The strategies for reaching our goals, as well as the actions planned for FY 2002 and beyond, are described in Part 2 of this report.

#### A. Our Core Values

As beneficiaries of a proud heritage dating from the Manhattan Project, NNSA is building an enduring legacy by identifying and embracing its core values:

**Excellence** – We strive for excellence in performing our critical national security missions; scientific exploration; technology development; laboratory and industrial operations; information and materials security; environment, safety, and health; and project and program management.

**Integrity** – We demand the highest standards of ethical behavior, for each of us is personally entrusted with, and accountable for, protecting and defending our national security. We will meet our commitments.

**Respect** – We treat our colleagues with dignity, value diversity, provide fair opportunity, and reward achievement.

**Teamwork** – We accomplish our mission by working cooperatively and respecting the roles of the leader and team members.

NNSA will earn *public trust* by practicing these core values.

#### B. Our Mission – To Strengthen United States Security through the Military Applications of Nuclear Energy and by Reducing the Global Threat from Terrorism and Weapons of Mass Destruction

The NNSA plays critical roles in the national security community:

- Maintain a safe, secure, and reliable nuclear weapons stockpile to help ensure the security of the United States and its allies, to deter aggression, and to support international stability.
- Detect, prevent, and reverse the proliferation of weapons of mass destruction, and promote international nuclear safety.
- Provide the U.S. Navy with safe, militarily effective nuclear propulsion systems.
- Support U.S. leadership in science and technology.

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These functions are now integrated into one organization to secure strong management and to improve business practices. Our mission statement includes all mandates contained in the six missions listed in the NNSA Act.<sup>3</sup>

**C. Our Vision – To Be an Integrated Nuclear Security Enterprise Operating an Efficient and Agile Nuclear Weapons Complex, Recognized as Preeminent in Technical Leadership and Program Management**

- We promote technical excellence and use best-in-class business practices to deliver quality products, science, and technology.
- After more than half a century of achievement, we will renew and maintain our capabilities by developing future generations of scientists and engineers and revitalizing the nuclear weapons complex.
- We are committed to protecting the nation’s sensitive information and assets.
- We are committed to maintaining a safe workplace and sound environmental stewardship.

Our vision is consistent with our determination to improve our business practices and responds vigorously to the intent of the Congress in creating the National Nuclear Security Administration.

**D. The Issues We Face**

NNSA faces key challenges in responding to evolving requirements and in maintaining and improving the health of the nation’s nuclear security enterprise. The expanded focus on international terrorism following the September 11, 2001, attacks underscores the importance of maintaining a strong national capability in the science and technology of nuclear security.

President Bush is seeking to transform our national security strategy to meet the threats of the 21<sup>st</sup> century. Recent attacks on America’s homeland demonstrated that it is not enough to plan for large conventional wars in distant theaters; the United States must also identify and perfect the capabilities required to detect, deter, and defeat adversaries who rely on surprise and deception to achieve their objectives.

While the policies and priorities established by the President and the Congress will determine the scope of our work over the years to come, we know that nuclear deterrence will remain an integral part of our national defense strategy for the foreseeable future, just as we know that we will be deeply involved in arms reduction and nonproliferation activities. Most important, we know that NNSA can make significant contributions to the Administration’s new capabilities-based national security strategy, which requires us to maintain our military advantages in key areas while developing new areas of military advantage and denying

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<sup>3</sup> 50 U.S.C. § 2401.

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advantage to adversaries. All this calls for NNSA to be agile and responsive to the realities of a changing world.

While we cannot predict with certainty the future evolution of U.S. national security strategy, our ability to perform NNSA's core functions depends on continuously renewing our internal capabilities, in terms of both people and plant. Key scientists and engineers who perfected their specialized skills in both nuclear weapons development and detection during the era of underground nuclear testing continue to retire, and their skills and technical insight must be replaced. In addition, our physical plant infrastructure continues to erode, in some cases to the point that we are no longer able to perform essential tasks.

It is imperative that we address these issues now. We no longer have the luxury of deferring this renewal to a later date without significant impact on our ability to accomplish our mission.

## **E. Our Strategic Goals**

Over the past year, NNSA has developed an organizational plan that is aligned to our strategic goals. These goals demand continuous improvement in all we do, from planning through program execution:

- Goal 1:** Maintain and enhance the safety, security, and reliability of the nation's nuclear weapons stockpile to counter the threats of the 21<sup>st</sup> century.
- Goal 2:** Detect, prevent, and reverse the proliferation of weapons of mass destruction while promoting nuclear safety worldwide.
- Goal 3:** Provide the Navy with safe, militarily effective nuclear propulsion plants, and ensure their continued safe and reliable operation.
- Goal 4:** Ensure the vitality and readiness of the NNSA's nuclear security enterprise.
- Goal 5:** Create a well-managed, responsive, and accountable organization.

The remainder of Part 1 of this report describes NNSA's strategy for improving organizational *effectiveness* and *efficiency*. In Part 2, NNSA describes the objectives and strategies that each organizational component will employ to achieve the NNSA's key goals, its accomplishments over the past year, and its plans for FY 2002 and beyond.

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## Chapter II

### Organizational Plan – Corporate Strategy for Improving Effectiveness and Efficiency

This chapter describes NNSA organizational accomplishments over the past nine months and NNSA’s strategy for improving corporate performance.

To achieve the vision of operating an efficient and agile nuclear security enterprise recognized for world-class technical leadership and program management, the NNSA has been installing new business systems and practices. In May 2001, NNSA outlined a two-phased approach to attaining organizational *effectiveness* and *efficiency*:

The tasks described in this [*May Report*] constitute the first phase of implementation, which focuses on improving the effectiveness of NNSA processes, procedures, and management practices. We expect this phase to take approximately seven months. The next phase of work will focus on improving the efficiency of operations. This second phase will also focus on implementing recommendations of the expert group chartered by the Administrator to seek solutions to challenging issues regarding roles and responsibilities within NNSA.<sup>4</sup>

Nine months after having submitted an “interim” report, NNSA has refined its strategy: this *Organization Report* describes three objectives and accompanying actions for achieving the twin goals of establishing an *effective* and *efficient* organization. Fundamentally, NNSA is seeking to attain these goals through (1) increasing organizational discipline and accountability by clearly defining authorities and responsibilities, (2) achieving enterprise-wide integration of its activities, and (3) lifting the administrative burdens on the people performing mission work.

The task is more complex than realigning reporting relationships and rewriting procedures and job descriptions; it is a major change that will affect nearly everyone in the enterprise. NNSA leadership is committed to implementing these organizational changes through long-term efforts that involve employees in developing new practices and by communicating frequently with employees as this transformation proceeds.

#### A. Organizational Accomplishments

Since transmitting the *May Report* to Congress, NNSA (1) implemented its new organizational structure that consolidates headquarters support functions; (2) installed a leadership team responsible for mission performance and driving organizational improvement; (3) began integrating NNSA decision making through the Management Council; (4) adopted the Planning, Programming, Budgeting, and Evaluation system as NNSA’s core business process; (5) further defined NNSA’s relationship with the Department of Energy (DOE) through streamlining external oversight and establishing an independent federal human resource management capability; (6) resolved the key organizational issues left

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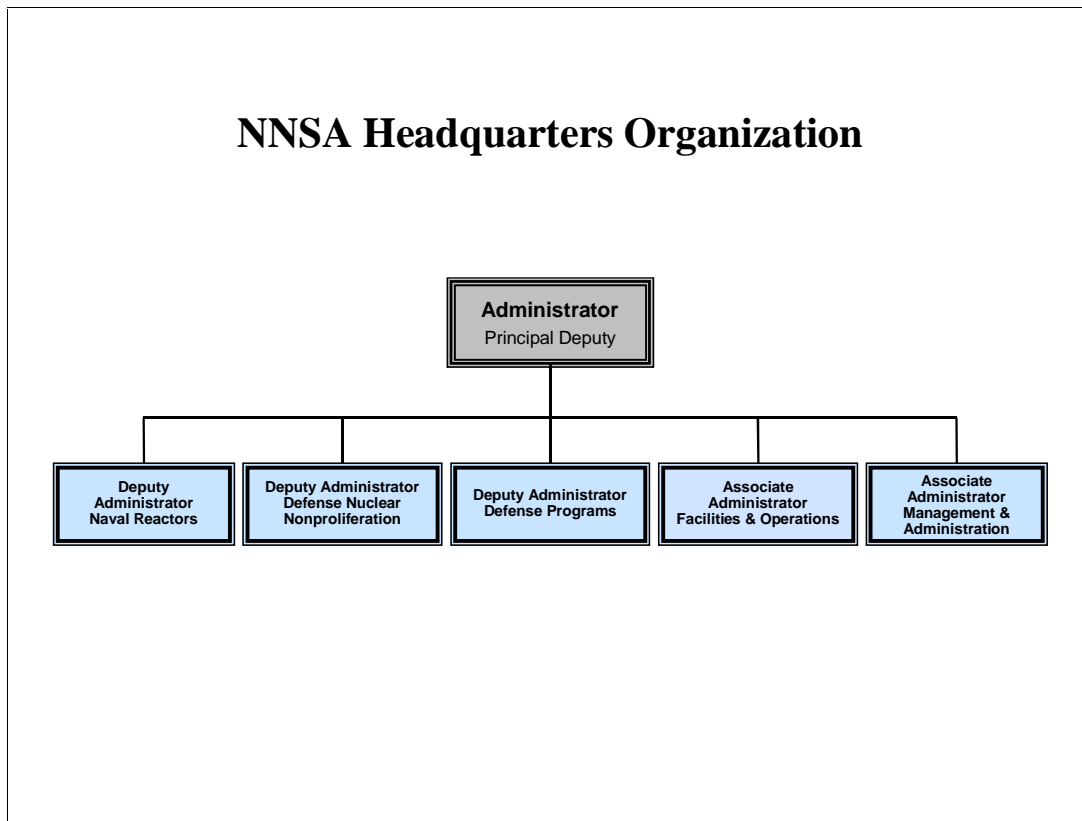
<sup>4</sup> *Report to Congress on the Plan for Organizing the National Nuclear Security Administration* (National Nuclear Security Administration, May 3, 2001), p. 3-1. Hereafter referred to as the *May Report*.

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unanswered by the *May Report*; and (7) refined NNSA’s strategy for achieving an *effective* and *efficient* organization.

**1. NNSA has implemented the new headquarters organization**

The *May Report* defined the functional responsibilities of each headquarters component and was a first step in establishing organizational discipline and accountability. The new organization consolidates NNSA support functions—previously located in the program components—with the goals of improving service and freeing program organizations to focus on mission performance. On August 2, 2001, the Administrator issued a memorandum that formally approved the high-level structural changes and identified the people to staff the new components of the NNSA. On October 7, more than 180 staff members were reassigned into these new components, shown in the figure below:



As NNSA began specifying the procedures for accomplishing assigned duties and staffing the new headquarters components, functional responsibilities have been fine-tuned. In particular, the Facilities and Operations component has been recast in light of decisions regarding organizational authorities and responsibilities. (This change is discussed later in this chapter, and other changes are explained in the chapters describing each separate headquarters component.) The objective is to specify, in writing, the functions and procedures that each component is responsible for managing.

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## 2. Leadership is in place

The Administrator assembled a management team to drive mission performance and lead organizational improvement efforts. In May 2001, the Administrator appointed an acting Principal Deputy Administrator and acting heads of the two new components, Facilities and Operations (F&O) and Management and Administration (M&A). Leaders for each of the first-tier subcomponents of these support organizations were also identified. The President, on recommendation of the Administrator and the Secretary of Energy, nominated Deputy Administrators for Defense Programs (DP) and Defense Nuclear Nonproliferation (NN), and the Senate has confirmed both Deputies.

## 3. Management Council is operating

The NNSA Management Council has been established and meets twice a week to deal promptly with crosscutting issues and to identify opportunities for synergy across NNSA components. It is the mechanism for high-level integration and dispute resolution, and it approves all crosscutting policies and directives.

In addition to being responsible for maintaining overall organizational discipline, the NNSA Management Council provides for the integration of program and facilities stewardship across the weapons complex. The organizational structure adopted by NNSA intentionally introduces constructive tensions that must be resolved through teamwork and partnership. The Management Council provides the forum for addressing these issues.

The Management Council is chaired by the Principal Deputy Administrator and includes the Chief of Staff; the Deputy Administrators of DP, NN, and NR; and the Associate Administrators of M&A and F&O.

Among its key accomplishments since its inception in May 2001, the Management Council:

- **Drove organizational restructuring.** Rather than rely on external recommendations for resolving challenging organizational issues and improving performance, the Management Council developed options and managed the process for arriving at the decisions and actions contained within this report.
- **Directed staff redeployment, based on *May Report*.** More than 180 NNSA employees were reassigned into the new organizational structure in October 2001. The Management Council was the forum for developing the strategy for accomplishing this redeployment.
- **Approved new business processes.** The NNSA Management Council has guided the implementation of the Planning, Programming, Budgeting, and Evaluation (PPBE) system that will be the backbone business process for the organization. It has also reviewed and approved a new contractor assessment and evaluation process and a streamlined external oversight system.
- **Established independent federal human resource capability.** The Management Council also played a key role in establishing NNSA's federal human resource capability. The Council encouraged development of—and approved—the NNSA's

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interim excepted service authority policy and helped create the NNSA Executive Resources Board.

The Management Council is currently and will continue to:

- Provide the penultimate forum for discussions and decisions regarding priorities among NNSA programs during the formal budget process (in the headquarters programming phase of the PPBE system). It will also provide a forum for deciding crosscutting budget issues throughout the year.
- In consultation with federal field elements, determine staffing levels for each NNSA headquarters component and field element and approve federal staffing plans.
- Review and discuss major crosscutting NNSA initiatives prior to approval by the Administrator.
- Review and approve NNSA-wide policies, directives, guidance, and procedures prior to implementation, including those specific to the working relationships between headquarters; federal field elements; and the laboratories, production facilities, and test site.
- Coordinate NNSA responses to DOE taskings and directives.
- Provide leadership for, and track implementation of, the management initiatives contained in this *Organization Report*.
- Integrate key issues between headquarters and field elements and across NNSA sites by including the eight NNSA Site Office managers in expanded Management Council meetings on a regular basis.

One of the key reasons for the initial success of the Management Council was the appointment of a Principal Deputy Administrator. As the chair of the Council, the Principal Deputy provides the impetus to find corporate solutions to problems that arrive at the Council's door. The Congress recognized the value of this role by establishing it as a statutory position requiring Presidential appointment and Senate confirmation in the National Defense Authorization Act for FY 2002.

#### **4. NNSA has begun using an integrated Planning, Programming, Budgeting, and Evaluation (PPBE) system**

Over the next year, the PPBE system will become the core business process for managing the NNSA. Decisions about resources must be made in an integrated manner, taking into account Administration policy and the needs of the entire complex. To support timely, accountable, and integrated program and resource decisions, NNSA is deploying a new Planning, Programming, Budgeting, and Evaluation process.

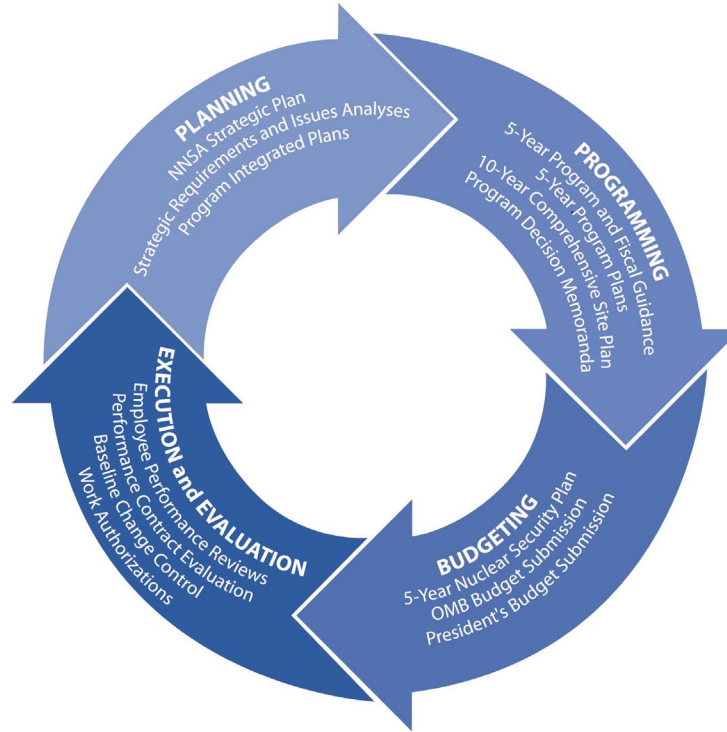
This decision-making tool will link long-range planning (*what* NNSA needs to do) with programming (*how* NNSA will accomplish it), with budgeting (obtaining *resources* and applying fiscal *constraints*), and with evaluation (*verifying* that the mission has been accomplished as planned). NNSA expects that documents generated in the PPBE system will meet some existing legislative requirements, such as the Stockpile Stewardship Management



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Plan and the Future Years Nuclear Security Program Plan. A diagram of the PPBE cycle follows:

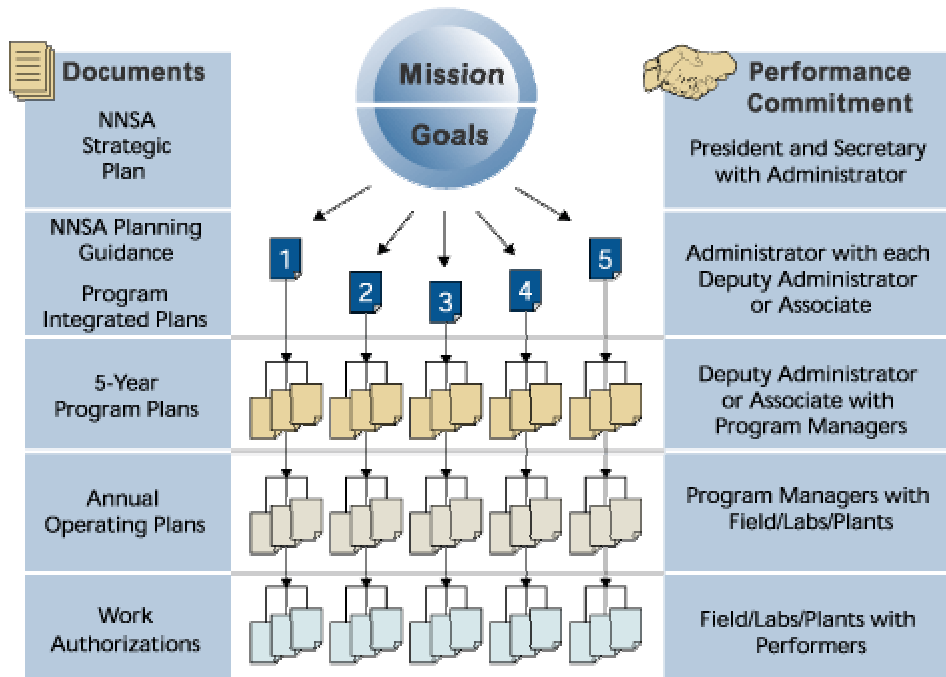
### Planning, Programming, Budgeting, and Evaluation Cycle



The key features of the system include:

- **Multiyear, connected, and rationalized planning and budgeting system.** The PPBE system will allow the assessment of requirements against fiscal and program constraints over a five-year period and allow NNSA managers to evaluate trade-offs between activities within that period. It will be a dynamic and predictable process, with scheduled updates for changing conditions twice during the year.
- **Documented planning hierarchy.** The planning hierarchy displayed below shows how NNSA plans to connect strategic planning to execution through integrated program plans, five-year budget plans, and annual operating plans. Each of these planning layers must incorporate guidance from above and other external requirements. Plans will include measurable indicators for accountability and evaluation.
- **Appropriate use of field, laboratory, and plant expertise in planning.** The vast majority of the data for developing detailed plans come from field and contractor employees and information systems. While overall responsibility for resource decisions must remain in federal hands, the PPBE process will require extensive involvement of field, laboratory, and facility organizations, with added emphasis on program execution and evaluation.

## Documented Planning Hierarchy



**PPBE accomplishments.** NNSA has begun using the PPBE system for each of the three budget years currently in execution or preparation:

- For FY 2002, the plan for managing enacted appropriations reflects integrated NNSA PPBE processes for financial execution, closely tied to milestones and deliverables contained in work authorizations. NNSA has also begun to implement an automated system to streamline budget execution record keeping.
- The FY 2003 budget was developed in a unified manner, involving a review by the Office of Management and Budget (OMB), with input from Department of Defense (DoD) regarding NNSA’s weapons-related requirements and associated budgets.
- The FY 2004 budget cycle is under way. NNSA generated draft strategic guidance in October, and each program component is currently developing an integrated plan. Five-Year Program and Fiscal Guidance will be issued in February, beginning the “programming” step in the NNSA PPBE process.

NNSA is on track to deliver an FY 2004 budget to the Congress that fully meets the congressional intent of having a PPBE system driving the resource decision process.

### 5. NNSA’s “semiautonomous” relationship with DOE is being clarified

Since May, the Management Council has taken steps to implement NNSA’s statutory status as a “separately organized agency.”<sup>5</sup> The Council has adopted a phased approach that

<sup>5</sup> 50 U.S.C. § 2401.

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involves assessment of the status of each NNSA function and the costs and benefits of continued reliance on the DOE for service.

The federal human resource function is one area in which the Administrator decided that NNSA should develop an independent capability. With the approval of the Secretary, an Executive Resource Board was established to provide for the selection, promotion, and development of the executive workforce and leadership of the NNSA. The management of the remainder of the NNSA's federal staff is evolving, with emphasis on effective use of excepted service positions. Staffing of field elements with the required technical capability and capacity has the highest priority so that responsibility can be assigned to employees close to the work.

Similarly, at the Administrator's initiative, NNSA worked with DOE to reach agreement that the Office of Independent Oversight and Performance Assurance (OA) will consolidate DOE's independent oversight of the NNSA and support the Administrator in the areas of environment, safety, and health, as well as safeguards, security, cyber security, and emergency management. These independent oversight activities will be conducted to a schedule and standards consistent with NNSA policies and priorities. NNSA line managers retain primary responsibility for performance in the areas that OA will assess. NNSA will maintain the ability to conduct self-assessments that will be the mechanism for assuring safe performance of the mission.

The Management Council's evaluations found that in certain circumstances, it would be to NNSA's advantage to continue using the Department's assets. For example, Price-Anderson enforcement has functioned effectively. The NNSA has negotiated a memorandum of understanding outlining how the Office of Enforcement and Investigation will provide the same services to the Administrator for matters involving the NNSA's operations as those provided to the Secretary for the DOE.

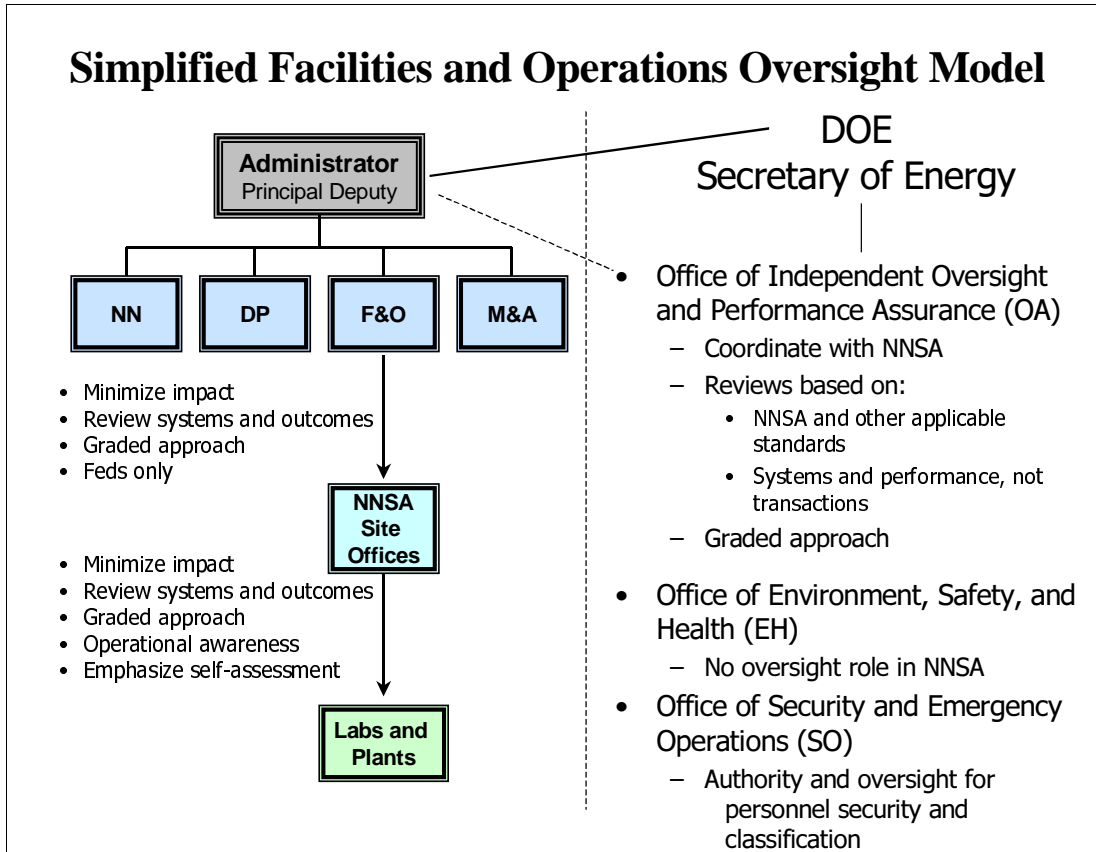
Another area in which NNSA will continue to rely on assistance from the DOE is the investigation of serious accidents. The services of the Department will continue to be used with full participation by the NNSA technical staff. This has worked effectively over the past two years. The arrangement will be formalized to assure that the Administrator has a key role in the investigatory process.

Where appropriate, NNSA is seeking autonomy, but it has negotiated—and will continue to negotiate—the use of the Department's staff to address NNSA needs, with the proviso that DOE support staff function in accordance with an agreement that ensures that NNSA priorities and standards are the basis of the service.

The Administrator's initiatives to streamline external oversight and to establish an independent federal human resource management capability are discussed in more detail below.

**NNSA and DOE have developed a streamlined independent oversight process.** NNSA has clarified and simplified the respective assessment roles of DOE and NNSA. Except in "for cause" instances, DOE will coordinate its assessments with NNSA through the Office of Independent Oversight and Performance Assurance (OA). DOE's OA Office has been delegated the responsibility for consolidating DOE oversight at all NNSA sites. On July 26,

2001, the Secretary of Energy directed that the OA mission be expanded to include DOE oversight of environment, safety, and health (ES&H), as well as safeguards, security, cyber security, and emergency management.<sup>6</sup> On August 23, 2001, the Deputy Secretary of Energy provided further details of OA's expanded role, which went into effect on October 1, 2001.<sup>7</sup> This consolidation is designed to streamline and improve external oversight of NNSA sites.



Several significant improvements result from these organizational changes:

- ES&H independent oversight is elevated to a direct report to the Secretary.
- ES&H oversight is no longer subordinate to the ES&H policy organization, eliminating the potential for conflicting priorities in situations where inadequate policy is impacting the effectiveness of site ES&H programs.

<sup>6</sup> “Changes to the Department’s Management Structure,” Memorandum from the Secretary of Energy, July 26, 2001, p. 2.

<sup>7</sup> “Changes to the Department’s Management Structure – Environment, Safety, and Health (ES&H),” Memorandum from the Deputy Secretary of Energy, August 23, 2001.

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- Combining the oversight mission into a single coordinated program increases efficiency and improves coordination, thereby reducing the administrative burden on NNSA site operations.

In FY 2001, OA enhanced its independent oversight of site safeguards and security (S&S), cyber security, and emergency management programs. These enhancements included establishing a system for prioritizing sites and conducting appraisals that examined S&S, cyber security, and emergency management. Also, a system was established in which the frequency and scope of appraisals are adjusted based on site performance, on the effectiveness of the contractor self-assessment programs, and on NNSA line management assessments. These enhancements resulted in more effective oversight, with fewer on-site reviews and therefore less impact on site operations.

In FY 2002, OA has extended these enhancements to the oversight of ES&H programs. In addition, OA will focus more on NNSA line management efforts to monitor and assess contractor performance, with the longer-term goal of ensuring that line management oversight continues to improve.

**NNSA has established separate human resource function and policies.** Effective May 30, 2001, the Secretary of Energy delegated to the NNSA Administrator the authority to establish an NNSA Executive Resources Board (ERB), appoint Board members, and approve executive personnel actions for positions and appointees to senior federal service grades. This authority allows NNSA to manage staff as a separately organized entity within DOE, giving the Administrator authority and responsibility for the selection, promotion, and performance management of the executive workforce and future leadership of NNSA.

On July 19, 2001, the Administrator approved the NNSA ERB Charter and formally established the Board, which comprises career senior executives from headquarters and field offices; the Administrator serves as its chair. The Board met for the first time on August 22, 2001, and began deciding cases for NNSA senior executives and senior excepted service appointments.

## **6. NNSA has resolved the issues left open in the *May Report***

NNSA committed to “assemble an expert group to review and make recommendations or provide options for resolving long-standing, very complex issues concerning roles and responsibilities—particularly in the relationship between headquarters and field elements.”<sup>8</sup> NNSA committed to reviewing these four issues:

- The line of authority and accountability for managing programs.
- The roles and responsibilities for safety, security, and funding for NNSA facilities.
- The structure of NNSA’s field elements (including Operations and Area Offices) and the reporting relationships to headquarters program and support components.
- The powers invested in line functions versus staff functions.

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<sup>8</sup> *May Report*, p. 1-7.

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As the Management Council began operating, NNSA's new leadership focused on resolving these issues within the organization *before* submitting them to the "expert group" for external review. Under the direction of the Principal Deputy Administrator, key NNSA managers developed options for addressing these issues during the summer. These options were discussed individually with senior managers from across the NNSA complex and then collectively in a meeting held on August 30, 2001, in Albuquerque, New Mexico. From those discussions, the options were refined and discussed with five senior external advisors<sup>9</sup> on the morning of September 11, 2001, and then with a subset of that group for most of the following day. Since then, consultations with these advisors and others have continued, and the NNSA Management Council has considered and agreed on the following decisions and actions that will resolve the four issues and improve both mission *effectiveness* and organizational *efficiency*:

- NNSA has chosen a model for organizing its field structure that *eliminates a layer of management and provides criteria for redeploying federal staff*. The new structure places sufficient authority and responsibility in a federal manager at each of the eight primary NNSA sites to work effectively with the site management and operating (M&O) contractor. Support functions, such as finance, procurement, and federal personnel, will be consolidated into "Centers of Excellence" in the field for key functions.
- NNSA has defined key reporting relationships. Fundamentally, the laboratories, production plants, and test site contractors report to the Administrator through a contracting officer who is also an NNSA Site Office manager.
- NNSA has defined the line of authority and accountability for managing programs by delegating responsibility from the Administrator to the Program Deputy Administrators (DP and NN) for integrating all aspects of accomplishing their assigned missions in program decision making. The Program Deputy Administrators are accountable to the Administrator and the Principal Deputy in carrying out their respective programs.
- NNSA has clarified the roles of headquarters organizations, particularly in regard to facilities. The Associate Administrators tasked with key support functions will be empowered advocates for weapons complex stewardship and business improvement. Associate Administrators will also have responsibility for setting policy, planning, and monitoring performance in their areas of expertise, as well as targeted responsibility for developing and overseeing budget for aspects of the enterprise such as federal staffing, security, and complex revitalization. However, the Associate Administrator for Facilities and Operations *will not* be the line manager for NNSA facilities and infrastructure, as was proposed in the *May Report*. That responsibility will remain with Program Deputy Administrators.
- NNSA has resolved the so-called "two headquarters" problem by adopting guidelines for activities that will be performed by headquarters and field elements (federal and

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<sup>9</sup> Don Pearman, Troy Wade, Nick Aquilina, Thomas Seitz, and Rush Inlow.

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contractor). The basic principle is that headquarters provides direction and field elements oversee, manage, and execute program. NNSA has adopted an operating model with two methods for managing work: one for production and one for all other activities. NNSA is committed to empowering expertise by driving down decisions to where the expertise resides. Headquarters staffing will be reduced based on the narrowing of assigned tasks, and the federal field structure will be reduced through streamlining that will flow from the new field structure and the redefinition of the relationship between federal and contractor employees.

- The NNSA Administrator will issue written delegations and defined tasking protocols outlining the powers invested in federal line and staff officers. The NNSA will demand discipline in the tasking process by establishing two rules: (1) direction within the federal family will be delivered only through a program direction channel created by formal delegations of authority from the Administrator, and (2) federal program direction to the laboratories, production plants, and test site will be delivered only by a warranted contracting officer (CO) or by a designated contracting officer's representative (COR). These rules formally preclude staff or oversight components from tasking contractor personnel. As a further check to prevent staff from generating mandates that are not funded, all crosscutting policy and guidance will be coordinated through the Management Council to ensure integration with mission requirements.

**Role of Facilities and Operations established.** The Associate Administrator for Facilities and Operations (F&O) will be the empowered advocate for the stewardship of the nuclear weapons complex and is an equal member of the NNSA Management Council. In addition, F&O will measure and assist in improving operational performance. Specifically, this component will:

- Set policy and guidance for facilities management; project management; environment, safety, and health; and safeguards and security.
- Provide policy, guidance, and assessment of the NNSA ten-year site plans prepared by each facility contractor and assist the Program Deputy Administrators in the integration of these plans across the complex.
- Provide technical assistance to federal field offices.
- Monitor performance and outcomes.
- Assess oversight systems.
- Assist program components to integrate operational considerations into resource and budget planning.
- Integrate and defend budgets for the Safeguards and Security and the Facilities and Infrastructure Recapitalization Program line items to ensure that program components can achieve mission objectives. The Administrator will formally delegate to F&O line authority for managing these line-item functions.

F&O will perform these functions in coordination with the program organizations and will only task federal field elements as defined in formal delegations from the Administrator, to avoid creation of separate functional lines of command for facilities, safety, and security.

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## 7. NNSA has developed a strategy for improving effectiveness and efficiency

As organizational transformation activities evolved during the past nine months, the NNSA Management Council identified three objectives to guide NNSA's overall corporate strategy for improving performance. Summarized below are these key objectives and the decisions and actions chosen to achieve them:

- **Increase organizational discipline and accountability by defining authorities and responsibilities.** Key decisions that NNSA has adopted for establishing greater discipline and accountability include (1) drawing a solid line between the functions that are performed at headquarters and those performed in field offices, laboratories, production plants, and the test site; (2) clarifying reporting relationships so that line accountability is clearly understood; (3) specifying tasking protocols in such a way that laboratory and facility managers are provided direction only by responsible and accountable officials; and (4) redesigning the relationship between federal officials and their counterparts in the laboratories, production facilities, and test site to focus on outcomes (*what* is accomplished), rather than transactions (*how* a task is accomplished).
- **Achieve enterprise-wide integration.** NNSA will achieve enterprise-wide integration through (1) communication, teamwork, and coordination between program and support components in preparing integrated program plans; (2) adopting the Planning, Programming, Budgeting, and Evaluation system as the core business process for managing the enterprise; (3) empowering the NNSA Management Council to resolve disputes; (4) directing the Principal Deputy Administrator to devote significant management attention to clearing away administrative roadblocks and to dispute resolution; and (5) facilitating the process for the Administrator to resolve disputes and to assume ultimate responsibility for integrating NNSA's activities.
- **Lift administrative burdens through streamlining policies, procedures, and staffing.** NNSA (1) has tasked its senior contractor managers to identify the most nettlesome administrative burdens; (2) has benchmarked best practices in other federal laboratories; (3) will reengineer its business processes, with the objective of reducing by half the administrative workload imposed by policies, procedures, and guidance; and (4) will rightsize and reinvigorate federal staff. Federal staffing activities will focus on redeploying and retraining federal staff as necessary to support NNSA's new organizational structure; encouraging higher-than-average attrition in selected areas through targeted buyout and early retirement offerings; redesigning federal career paths and development programs to encourage cross-training, diverse assignments, and corporate thinking; and improving employment incentives to help attract and retain high-quality staff.

NNSA will implement these three objectives through a coordinated, enterprise-wide reengineering effort.

**NNSA has consulted widely and benchmarked its objectives and actions, based on external assessments of the enterprise.** The Management Council vetted these objectives and actions with the five senior external advisors and the senior leaders of the laboratories,



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production plants, and test site. The Council also gathered input from a wide variety of external sources, including the Foster Panel<sup>10</sup> and the Hamre Commission.<sup>11</sup> In addition, it benchmarked the objectives and actions against the findings of four major studies of the weapons program completed during the past decade: the PFIAB Report,<sup>12</sup> the Chiles Commission Report,<sup>13</sup> the 120-Day Study,<sup>14</sup> and the Galvin Report.<sup>15</sup> (A summary of the issues raised by these reports can be found in the Appendix.)

The remainder of this chapter discusses the decisions that NNSA has made and the actions that will implement the three objectives. For each objective, the report describes (1) the principles underlying, and the strategy for achieving, each objective; (2) planned actions; and (3) the schedule for implementing these actions. It also provides selected references to observations and recommendations within the four external evaluation reports that relate to NNSA's decisions and actions.

## **B. Increase Organizational Discipline and Accountability by Defining Authorities and Responsibilities**

Increasing organizational discipline and improving accountability requires NNSA to specify reporting chains, authorities, and responsibilities throughout the organization. The objective is to eliminate the confusion observed both inside and outside the organization. This section describes the guiding principles for defining authorities and responsibilities, as well as the decisions and actions to accomplish this objective. In addition, it discusses NNSA's preferred model for organizing field elements consistent with these principles and the NNSA initiative to fundamentally redesign the relationship between federal officials and contractor management to improve accountability for delivering on the mission.

### **1. Organizational principles**

A few key principles define NNSA's strategy for increasing discipline and accountability:

- Federal officials determine requirements—*what* is needed.
- Laboratory, production plant, and other contractors deliver the product—the *what*—and manage *how* it is achieved.

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<sup>10</sup> Panel to Assess the Reliability, Safety, and Security of the United States Nuclear Stockpile.

<sup>11</sup> Commission on Science and Security.

<sup>12</sup> *Science at its Best, Security at its Worst: A Report on Security Problems at the U.S. Department of Energy*, prepared by a Special Investigative Panel of the President's Foreign Intelligence Advisory Board (PFIAB), June 1999. Hereafter referred to as the PFIAB Report.

<sup>13</sup> *Commission on Maintaining United States Nuclear Weapons Expertise*, Report to the Congress and the Secretary of Energy, March 1, 1999. Hereafter referred to as the *Chiles Commission Report*.

<sup>14</sup> *The Organization and Management of the Nuclear Weapons Program*, prepared by the Institute for Defense Analysis (IDA), March 1997. Hereafter referred to as the *120-Day Study*.

<sup>15</sup> *Alternative Futures for the Department of Energy National Laboratories*, prepared by the Secretary of Energy Advisory Board, Task Force on Alternative Futures for the Department of Energy Laboratories, February 1995. Hereafter referred to as the *Galvin Report*.

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- The lead role for each activity is performed in only one place.
  - Place is determined by expertise.
  - Direction is integrated across the organization before being delivered.

Virtually all of NNSA’s mission work is accomplished by contractor or field organizations, and this is where the vast majority of human capital and expertise resides. NNSA’s challenge is to balance headquarters’ legitimate needs to be kept informed with the dangers of micromanagement. “Everyone seems to agree that broad program guidance is the responsibility of headquarters while detailed program execution is the responsibility of the field, but there is no agreement on what distinguishes the two, or on what specific responsibilities are contained in one and not the other.”<sup>16</sup> ***NNSA will apply the discipline required for contract administration to provide the “bright line” required to avoid micromanagement.***

## **2. NNSA’s tasking is based on formal delegations and contracting procedures**

NNSA has established discipline in the tasking process by establishing two rules:

- Program direction within the federal family ***can only be delivered through a program direction channel*** created by formal delegations of authority from the Administrator.
- Federal program direction to the laboratories, production plants, and the test site will be delivered only by a warranted contracting officer (CO) or by a designated contracting officer’s representative (COR).

These rules formally preclude staff or oversight components from tasking contractor personnel.

NNSA’s organizational structure will be revised to reinforce these protocols by establishing an NNSA Site Office at each of the eight primary management and operations (M&O) contractor sites. These federal managers will be delegated sufficient responsibility to provide NNSA contractors the authority necessary to manage day-to-day activities without external intervention.

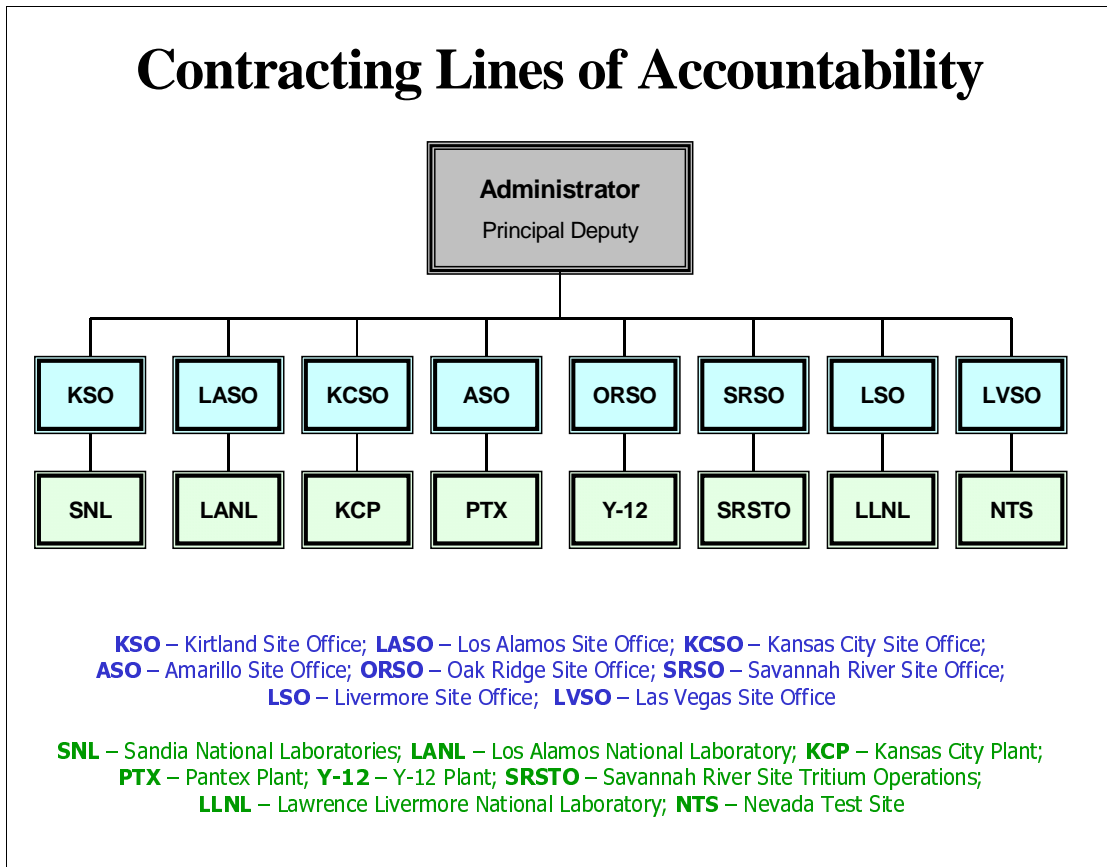
**NNSA has established clear reporting relationships.** Section 3212 of the NNSA Act states that the Administrator “has authority over, and is responsible for, all programs and activities of the Administration . . . .”<sup>17</sup> NNSA has decided to flow the Administrator’s authority and responsibility directly through a contracting officer—who is also an NNSA Site Office manager—to the laboratories, production plants, and test site contractors. In this way, NNSA’s basic reporting model is that the laboratory directors and facility managers report directly to the Administrator through a contracting officer. Federal Site Office managers report to the Administrator through the Principal Deputy. These reporting relationships are outlined in the figure below.

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<sup>16</sup> *120-Day Study*, p. I-7.

<sup>17</sup> [except for the functions of the Deputy Administrator for Naval Reactors specified in the Executive Order referred to in section 3216(b)]

While significantly expanding the Administrator's management span of control, this model establishes an almost direct reporting relationship between the Administrator and the contractors performing the work. This direct line of sight from the Administrator to the work reinforces the principle that headquarters provides direction and the field executes program.



**Delegations of authority create formal program direction channels.** For day-to-day transactions, the Administrator's span of control will be compressed by formally delegating specific authorities and responsibilities to Deputy and Associate Administrators. Tiered redelegations to lower management levels will follow, as appropriate. Formal delegations will establish the chain of accountability between the Administrator and the work. The Management Council will also play an important role in compressing the span of control by resolving conflicts and minimizing the issues that are raised to the Administrator.

Ultimate responsibility for determining the proper mix of production, science, infrastructure, safety, and security lies with the Administrator. The Deputies for Defense Programs and Defense Nuclear Nonproliferation Programs have been delegated responsibility for integrating these activities to achieve their respective program goals, and each field manager works with his or her respective contractor to ensure proper integration of NNSA activities with other programs performed at each site.

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NNSA's support components are responsible for policy development, oversight and assessment, and some planning and budgeting functions in infrastructure; environment, safety, and health; safeguards and security; federal personnel; information management; procurement; and budget. Except for those instances where the Administrator has specifically delegated authority, staff in these *support functions cannot directly task field elements or contractors*. Therefore, direction from support components is communicated through formal policy or guidance issued by the Management Council or the Administrator or through the formal program direction channels established for the execution of line management authority.

Formal delegations establishing the program direction channels will be prepared within the next month. Within the next three months, the Deputy and Associate Administrators and Site Office managers will formally redelegate elements of their decision-making authorities and responsibilities to their key managers, thus establishing formal program direction channels. These delegations will create a clear line of accountability for program direction and integration from the Administrator to the program Deputies, then to the NNSA Site Office managers/contracting officers, and finally to the contractor performing the work.

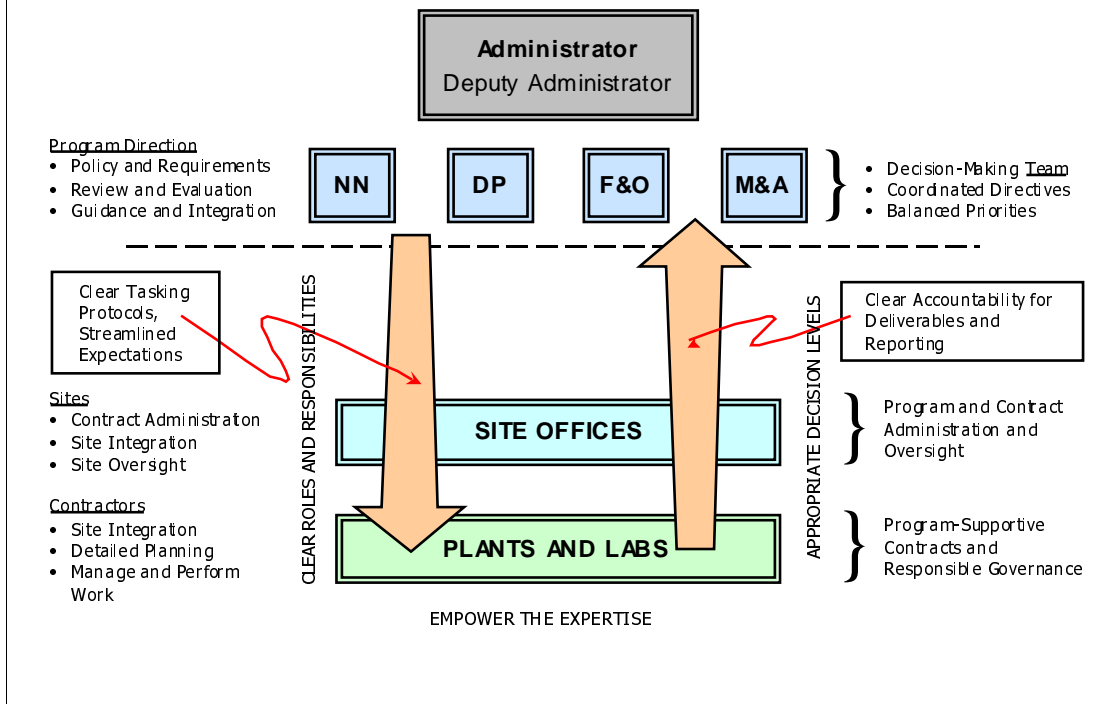
### **3. NNSA has defined an operating model with two basic approaches for managing work**

NNSA will manage work, based on the organizational principles that (1) the lead role for each activity is performed in only one place and (2) place is determined by expertise. For weapons production and site management activities, day-to-day federal program management will be located close to the contractor. For research, development, and nonproliferation activities, federal responsibilities for program planning and management will, in most cases, be located at headquarters.

**NNSA's operating model resolves the overlapping responsibility for weapons production between DP headquarters and the field.** Working from the basic principle that *headquarters provides direction and field elements execute program*, NNSA adopted the following broad outline of roles for weapons production and site management (summarized in the figure on the next page):

- Headquarters provides high-level guidance, sets requirements, defines policy and corporate processes, integrates overall program plans, develops and defends corporate budgets, assists the field in evaluating contractors, evaluates field oversight programs, and works with other governmental customers and stakeholders.
- Federal field organizations administer contracts and programs, validate detailed plans generated by contractors against headquarters requirements, develop detailed plans and obtain headquarters approval, perform oversight, review contractor self-assessments, evaluate contractor performance, and (in some cases) manage and execute programs.
- Laboratory, production plant, and test site contractors develop detailed program plans and budget estimates to meet headquarters requirements, manage and execute programs, and perform self-assessments.

# Basic Organizational Roles



Based on these general roles, NNSA will create a production integration organization from federal program management elements currently located in the Albuquerque Operations Office responsible for aspects of the nuclear weapons production, including production planning, transportation, infrastructure, environment, and nuclear materials management. This production integration organization will be assigned authority and responsibility for *detailed* planning, integration, and execution of the nuclear weapons production program. For example, if two NNSA Site Office managers cannot resolve an issue involving weapons production that crosses jurisdictional boundaries, the managers would seek to resolve their differences through consultations with the Director of this new organization prior to raising the issue with DP headquarters. The production integration organization will be housed in the Albuquerque Service Center and report directly to the Office of Defense Programs (DP).

**Overall** authority and responsibility for planning and execution of the nuclear weapons program lies with the DP Deputy Administrator. DP headquarters will be responsible for setting program requirements in consultation with the customer, the Department of Defense (DoD). DP will work with its DoD counterparts on the development of the annual Nuclear Weapons Stockpile Memorandum (NWSM) and the Requirements Planning Document (RPD).

On the basis of the NWSM and RPD, DP will prepare the Production and Planning Directive (P&PD) that specifies the numbers and types of warheads that will be made available to the military by certain dates. The production integration organization will prepare the detailed Program Control Document (PCD) that specifies the work that must be accomplished by each

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production facility, laboratory, and test site to meet military requirements. The production integration organization will also develop the budget estimate for the weapons production program, in support of the PPBE process. Issues identified in the PPBE process, as noted earlier, will be resolved in the Management Council or—ultimately—by the Administrator.

Assigning the production integration organization the authority and responsibility for managing the nuclear weapons production program (maintenance, surveillance, evaluation, and dismantlement/disposal) is consistent with traditional practice within the weapons program. For clarity in interpreting these guidelines, the Deputy Administrator for Defense Programs will issue a memorandum within the next two months, based on the model that was employed during the era of high-volume weapons production.<sup>18</sup> Over the next year, NNSA will reengineer the DP headquarters and field elements to eliminate overlapping program management activities and redeploy expertise required for managing the weapons program. Also, to assure responsiveness from the production integration organization to headquarters program requirements, the new director's performance rating will be reviewed by the Deputy Administrator for Defense Programs.

**NNSA's operating model also places federal responsibilities for program planning and management of science and technology and nonproliferation programs closest to the expertise—in most cases, at headquarters.** For activities not related to production and facilities, federal program planning and management will be predominantly located in headquarters. Unlike the production model, headquarters staff will perform federal oversight of contractor execution of science and technology and nonproliferation programs.

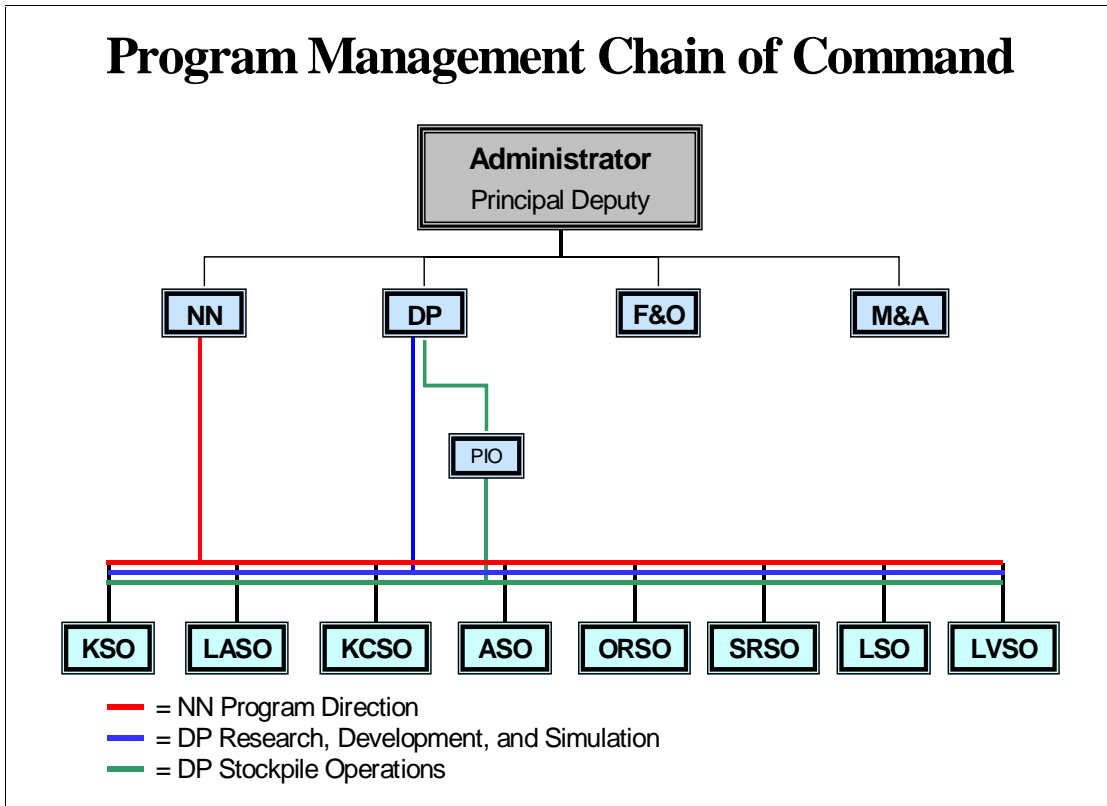
Although this operating model is already in place and generally functioning well, it currently accommodates program technical direction being delivered outside of formal contract channels. To rectify this and to be consistent with the principles outlined earlier, the Administrator will designate contracting officer's representatives within the appropriate headquarters programs.

Displayed below are the proposed program management chains of command for various program functions:

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<sup>18</sup> Memorandum from Brigadier General Edward B. Giller, USAF, AEC Assistant General Manager for Military Applications, "Management of AEC Weapons Development/Production Interface," May 7, 1968. The memo described selected responsibilities of the Division of Military Applications (headquarters), the Albuquerque Operations Office (field), and the weapons laboratories and describes how Albuquerque manages the production complex, including determining production responsibilities and schedules and exercising budget control.

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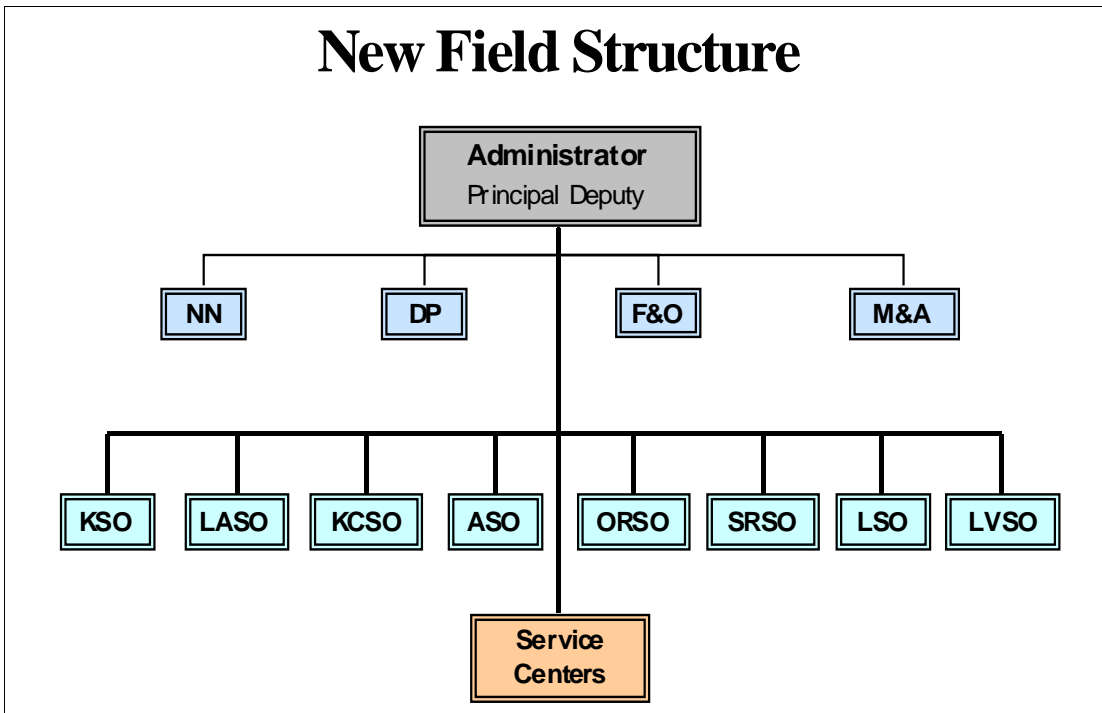


#### 4. NNSA has defined specific roles for Site Offices and Service Centers

Each NNSA Site Office will have primary responsibility for day-to-day program and contract administration for its assigned facility. These duties include agreeing to the overall safety and security parameters within which the contractor is authorized to operate.

Site Office managers for their respective laboratories, production plants, and test site have the additional responsibility of integrating NNSA activities at these sites with customers from other elements of the Department of Energy (such as the Environmental Management and Science programs), other federal agencies (such as DoD), and the private sector.

Over the next year, current Operations Offices in Albuquerque, Las Vegas, and Oakland will be reengineered and transformed, as appropriate, into Service Centers that will provide the support required to maintain the eight NNSA Site Offices. NNSA expects that responsibility for functions required across the entire field structure (such as financial management, contract oversight, personnel processing, security clearance processing, and information technology) will reside in “Centers of Excellence” at these Service Centers. These Centers will also serve headquarters’ administrative needs, as appropriate. Initially, these Service Centers will report directly to headquarters (the Principal Deputy Administrator). Options for changing this reporting relationship will be considered within the scope of the reengineering effort. Consolidation and streamlining of Service Center functions will be part of the NNSA reengineering effort.



### 5. NNSA will redesign the federal-contractor relationship to improve accountability

*Trust, teamwork, and verify* will be the watchwords in program management. Federal employees, with contractor input, will establish broad program objectives and goals. Contractors, in consultation with federal employees, will be given the flexibility to execute programs efficiently and will be held accountable for meeting those objectives and goals.

This new relationship will create greater accountability by eliminating the blurred responsibility for “management” that has developed over the past decade. With taskings coming from a variety of directions, often involving specific transactions, the blurred line between day-to-day management and program direction has made it difficult to assign clear responsibility.

In the future, federal officials will provide coordinated direction regarding *what* the government wants and administer contracts and programs. NNSA’s contractors will manage *how* the program is executed. The laboratories, production plants, and test site will be judged predominantly on *what* they deliver, rather than *how* it is accomplished:

**New governance approach.** With these principles in mind, NNSA will develop and implement a simpler, less adversarial contracting model that capitalizes on the private-sector expertise and experience of the management and operating contractors while simultaneously increasing contractor accountability for high performance and responsiveness to NNSA program and stewardship requirements. NNSA will begin this new approach immediately by developing a contractor governance strategy based predominantly on commercial standards and the best industrial practices.



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The governance strategy will be accompanied by an assurance model that will rely as much as practicable on third-party, private-sector assurance systems such as comprehensive internal auditing, oversight by boards and external panels, third-party certification, and direct engagement between oversight bodies and NNSA's leadership.

NNSA has adopted a two-phased approach to this effort. The first phase, which the Albuquerque Operations Office is leading, involves reducing requirements in excess of those mandated by law and regulation within the context of the existing contract with Sandia Corporation for the management and operation of Sandia National Laboratories (SNL). The second phase, also being led by NNSA's Albuquerque Office and accomplished with input from private industry and academia, will develop a "Model for Improving Management and Performance" that can be implemented in future contracts. This model will be piloted at SNL, and if subsequent appraisal of this approach is positive, it would be implemented at the other NNSA laboratories, plants, and the test site.

**Staff Rotation.** NNSA will also integrate laboratory and plant expertise throughout the NNSA complex by immediately developing and implementing programs for temporary reassignment and rotation of highly qualified staff between federal and contractor roles or (where appropriate) between NNSA and other federal agencies. Such rotations and reassignments will be required and rewarded in the new NNSA management development culture.

### **C. Achieve Enterprise-Wide Integration**

Various studies of the weapons program and the Department of Energy as a whole have highlighted program integration as a major concern—leading to administrative inefficiencies, budget disputes, and delayed decision making. Two dimensions of the problem were identified in the *120-Day Study*: (1) between production and science elements of the Stockpile Stewardship Program (as well as weapons complex stewardship) and (2) between programmatic objectives and "overhead" or support activities (such as facilities operation, safety, and security).<sup>19</sup>

NNSA's approach to integration resolves both of these problems by (1) adopting the Planning, Programming, Budgeting, and Evaluation system as the core business process for managing the enterprise; (2) preparing integrated program plans through teamwork and coordination between program and support components; (3) empowering the NNSA Management Council to resolve disputes; (4) directing the Principal Deputy Administrator to devote significant management attention to dispute resolution and to clearing away administrative roadblocks; and (5) recognizing that the Administrator possesses the ultimate responsibility for integrating NNSA's activities. Earlier, this chapter described the key role of the PPBE system and the Management Council. This section discusses NNSA's plans for integrated planning and dispute resolution.

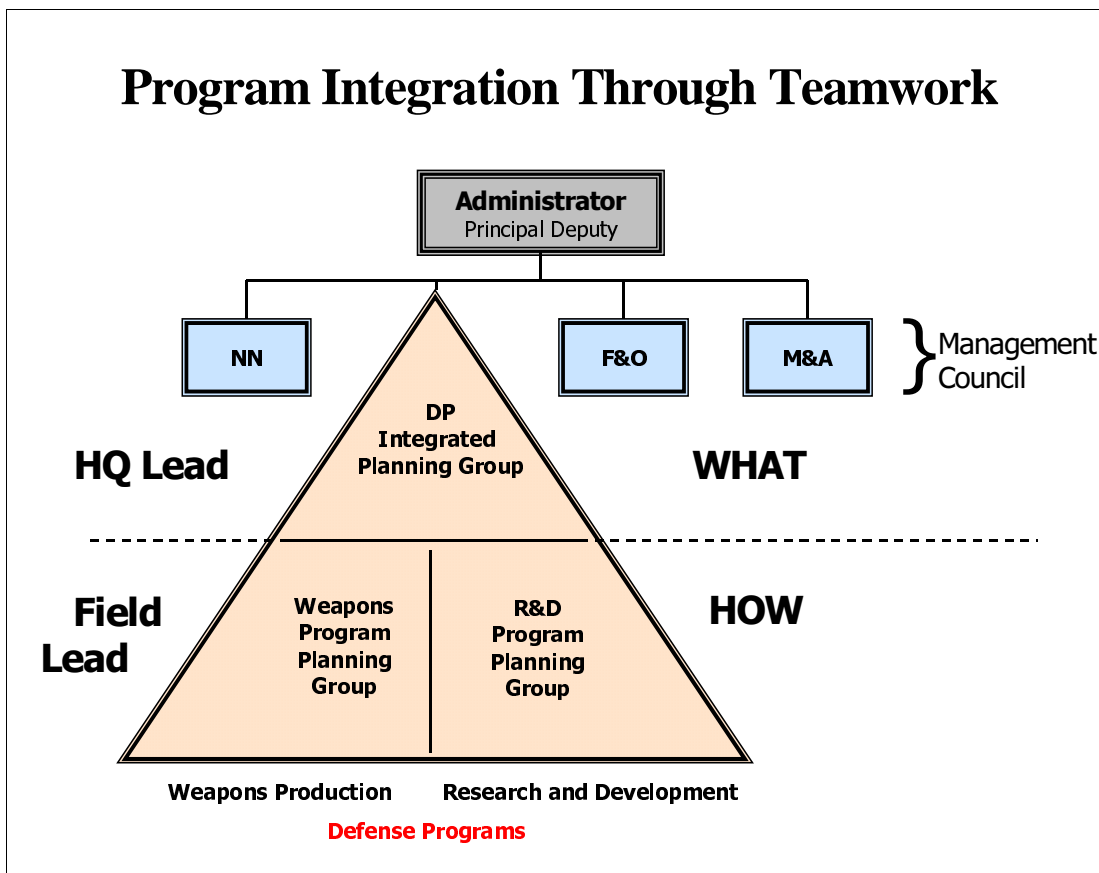
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<sup>19</sup> *120-Day Study*, pp. III-14 and III-15.

**1. NNSA will accomplish integrated planning through representation, communication, and teamwork**

Organizational tension is created by assigning policy and planning and some budget responsibilities to subject matter experts in infrastructure; environment, safety, and health; and safeguards and security. NNSA has created these tensions purposefully to guard against past failures to place sufficient focus on critical operational issues when integrating decisions are made at headquarters. On the other hand, NNSA must guard against organizations with functional expertise developing “stovepipe” views of the world that do not properly balance mission requirements with operational issues. The teamwork demanded by the checks and balances within NNSA’s organizational plan should prevent such suboptimization.

NNSA will perform integrated program planning with all of the “players” at the table. High value will be placed on achieving integrated solutions that support mission accomplishment. Such solutions can only be achieved by crossing disciplines, communicating, and working as a team. A model of the process focusing on Defense Programs is displayed below:



NNSA is establishing integrated planning groups tied to the Planning, Programming, Budgeting, and Evaluation system. Each Deputy and Associate Administrator will be responsible for preparing an integrated plan for the activities assigned to his or her

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organization, based on detailed plans developed, for the most part, by the laboratories, production plants, and test site.

The integrated planning groups will include functional and program experts across the enterprise and will be charged with bringing balanced, integrated solutions to NNSA's leadership. Below each integrated planning group, program and functional groups will be formed (as needed) to develop the detailed plans for programming and execution.

## **2. Resolving organizational tension through decision-making protocol**

NNSA has established a clear protocol for resolving the constructive tensions created by the organization plan. First, staffs from the program and support components work as a team to create integrated program plans. Program Deputies are responsible for resolving tensions within their components, and they work with their peers—primarily the Associate Administrators—on issues that cross component boundaries, such as personnel, infrastructure, and security. The next step is the Management Council. The Administrator is the ultimate arbiter of organizational tensions.

## **D. Lift Administrative Burdens through Streamlining Policies, Procedures, and Staffing**

As the NNSA continues the process of “standing up” the organization to meet the full potential intended by its creation, it is striving to achieve outcomes that will greatly enhance the overall *effectiveness* and *efficiency* of the enterprise. Principal among these are (1) streamlined and reduced oversight with minimal workload impact; (2) clarified and simplified requirements, including both operational and programmatic guidance and reporting requirements; (3) maximum empowerment of expertise in the laboratories and production plants; (4) site contractors accountable for performance in compliance with clear expectations; and (5) work processes that maximize individual and team productivity, consistent with mission focus, ES&H, and safeguard and security compliance.

### **1. NNSA is simplifying requirements and streamlining oversight**

By focusing on *what* the NNSA laboratories, production plants, and test site accomplish, rather than on reviewing individual transactions (*how* a task is completed), NNSA will significantly lighten the burden on those performing the nuclear security mission. NNSA will scrub policies, procedures, guidance, orders, and directives, thereby eliminating unnecessary transactional requirements, overlap, and duplication. Oversight will focus on evaluating systems and performance, rather than on transactions—again the objective is to streamline, and to clarify accountability for, accomplishing the mission:

- NNSA will *simplify requirements* by eliminating unnecessary details regarding *how* a task is to be accomplished from policy, guidance, orders, and other directions and by implementing contract reform that relies on commercial standards and external regulations, rather than self-generated burdens.

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- NNSA will *streamline oversight* by clarifying NNSA authorities and responsibilities, coordinating with DOE and other external overseers, evaluating systems—not transactions, and redefining federal jobs.

**Identify the most nettlesome burdens.** The Administrator will provide laboratory and plant technical staff with both immediate and longer-term relief from excessive administrative workload burdens. On October 26, 2001, the Principal Deputy Administrator tasked the laboratory directors and production plant managers to assess the administrative workload on scientific, production, and technical staffs and to recommend (within 60 days) measures that NNSA can take to cut that workload by one-half.

This initiative has identified specific actions to be addressed. The present excessive workload results from the cumulative effect of requirements levied by all levels of the NNSA management complex; therefore, effective simplification will require streamlining at all levels. The output of this effort will identify and prioritize—by impact—actions to be taken during NNSA’s reengineering campaign.

To address the “one-half reduction” goal, NNSA tasked the directors and managers to conduct an extensive review of all work processes, both operational and programmatic. Opportunities were identified over two time frames:

- **Immediate** opportunities that can provide relief and serve as models.
- **Longer-term** opportunities that will require follow-up actions to achieve full benefit.

The products of this effort was twofold: (1) immediate implementation of improvements within the control of the director or production plant manager and (2) a report detailing the findings of the review in three areas: (a) immediate opportunities for the Administrator, (b) longer-term opportunities for the Administrator, and (c) actions taken at one laboratory or plant that might be appropriate for others to take.

The results of this review were reported to the Principal Deputy Administrator on January 14, 2002. Three follow-up actions are being taken: (1) “lessons learned” are being shared across the complex; (2) a task force, drawn from across the complex, is evaluating the findings in the immediate time frame, developing a corrective action plan, and expediting the immediate implementation of improvements; and (3) the findings in the longer-term time frame are being factored into the NNSA-wide reengineering efforts described below.

**Benchmark best practices.** A pilot study, chartered by the Under Secretary for Energy, Science, and Environment and the Laboratory Operations Board (LOB) Best Practices Working Group, compared best practices at two federally funded research and development centers (FFRDCs) with Lawrence Berkeley National Laboratory. Best practices were identified that characterize the nature of the relationship between the federal agency and the contractor. The next steps include assessment of the study recommendations by the LOB working group. NNSA will include any applicable findings from this study as input to the NNSA-wide reengineering effort described below.

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## 2. NNSA is reengineering core business processes

Over the next year, NNSA is undertaking a systematic reengineering campaign. Simply put, the intent is to eliminate unnecessary or overlapping work at federal headquarters and field elements. By combining the data from (1) the most burdensome administrative requirements from the laboratories and facilities, (2) the best-practices benchmarking study, (3) the new contracting strategy, and (4) the model for restructuring field operations, NNSA is prepared to undertake a systematic reengineering of our business processes.

- **NNSA will develop a streamlined set of procedures for performing work.**  
Already, NNSA has developed a streamlined process for performing yearly contractor assessments and fee determinations. In addition, the Planning, Programming, Budgeting, and Evaluation system will result in greater discipline within the budgeting process.
- In preparation for this reengineering effort, NNSA managers have been asked to identify core business processes that must be streamlined. Candidates for reengineering will be chosen by the Management Council from the administrative burdens identified. The results of these reengineering efforts will provide the basis for building organizational staffing plans and rightsizing federal staff.
- Overcoming resistance to change is a major challenge facing NNSA's reengineering efforts. As the *PFIAB Report* concluded, "The Department [of Energy] has been the subject of a nearly unbroken history of dire warnings and attempted but aborted reforms."<sup>20</sup> To break the mold, NNSA will complete the following prerequisites to this systematic reengineering:
  - **Create a leadership coalition committed to bringing about the change.**  
Successfully leading a major change initiative is a senior management role. The Management Council will guide the reengineering efforts.
  - **Develop an integrated reengineering plan for the next year.** NNSA will prepare a reengineering plan with achievable targets agreed to by senior managers. NNSA senior managers, led by the Management Council, will create the plan and will be *held accountable* by the Administrator for achieving the milestones contained in the plan. Creation of this plan, which will be an integral part of NNSA's broader effort to establish a more effective organizational culture, has already begun and will be completed by the end of March 2002.
  - **Recognize that institutional changes require time.** Most organizational transformations take longer than initially anticipated. Overly optimistic expectations send one of two negative messages: that the leaders are not serious about the task or that they do not understand the complexity of the task.
  - **Apply adequate resources.** A significant number of NNSA staff from around the complex will be tasked to participate in teams dedicated to these efforts. Task force

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<sup>20</sup> *PFIAB Report*, p. ii.

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members will be evaluated and rewarded for their work on this reengineering, just as for other high-priority assignments.

- **Communicate with, and involve, employees.** Efforts to create a more *effective* and *efficient* organizational culture depend upon leadership devoting sufficient time and resources to communicating with employees performing the work. Plans for communication and employee involvement will be central elements of the reengineering plan.

### **3. NNSA will reinvigorate and rightsize federal staff**

Since 1992, federal staff has declined by about 58 percent—headquarters falling 53 percent and field elements declining by 59 percent. Since 1997, when the *120-Day Study* was released, federal staff for what is now NNSA has declined by about 6 percent—headquarters elements have fallen by 11 percent, and field elements have declined by 4 percent.

That said, NNSA recognizes that many federal employees perform overlapping functions while other technical and administrative jobs remain unfilled. For these reasons, rightsizing and reinvigorating the federal force are high priorities. Our plan is to (1) redeploy and retrain staff who are not performing core functions defined by the reengineering; (2) encourage higher-than-average attrition in selected areas through targeted buyout and early retirement offerings; (3) employ incentives to encourage career development, training, and retention of highly skilled employees; and (4) provide the federal oversight mandated by Congress in specific areas such as nonproliferation.

**Redeploy the NNSA federal workforce.** The results of our reengineering efforts will drive reassignment, retraining, and reductions in federal staff appropriate to achieving the simplified and streamlined requirements and oversight models that NNSA is developing. Each organization will develop staffing plans based on its core functions and primary work activities. Staff performing functions that are *not* the core responsibility of a given organization will be reassigned and retrained, as necessary.

**Employ incentives to encourage attrition.** NNSA has received the Secretary’s authority to employ buyout and early retirement incentives contained in the NNSA Act. These tools will be used to encourage above-average attrition so that NNSA can both achieve significant staff reductions and continue targeted hiring to fill skills gaps and to ensure the long-term health of the institution.

**Emphasize career development and training.** NNSA will focus greater emphasis on career development and training. NNSA’s most effective component—Naval Reactors—has long employed training and career development assignments as a key element of its personnel management strategy. While formal training is already available to the staff, NNSA will emphasize rotational and temporary assignments in both directions between the field and headquarters to encourage a more corporate perspective. As an alternative in selected areas, NNSA will identify opportunities for assignment at agencies such as the Departments of State or Defense. Both types of assignments will be rewarded prerequisites to career advancement and leadership within the NNSA. The *120-Day Study* endorsed this approach in its recommendation to improve the management of people and their careers:

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In most military and private sector organizations, headquarters elements are staffed with people who spend a considerable portion of their careers in the field. By rotating through headquarters during the course of their careers, that staff is able to stay in better touch with its operations, as well as provide better career training and development for its managers and executives.<sup>21</sup>

For training and career development efforts to yield the required results, NNSA will also redesign the federal career paths within the organization to match the knowledge, skills, and abilities needed for the reengineered federal organizations. Training and rotational assignments will be matched to the new career development paths.

**Employ excepted service authority to create incentives for attracting and retaining highly skilled employees.** NNSA is employing the limited excepted service authority granted the Administrator in the NNSA Act to provide necessary flexibility in our human resource policies and programs to attract and retain the highly skilled employees needed to fill the critical skill positions envisioned for a successful NNSA. NNSA will continue to seek excepted service status for the entire federal workforce. At the very least, NNSA is seeking authority to employ excepted service authority for technical career paths that experience high attrition. Combined with redefined career paths, excepted service authority will allow NNSA to offer both yearly incentives and longer-term career opportunities to motivate excellence within the federal force.

## **E. Path Forward**

NNSA's efforts to improve *efficiency* and *effectiveness* have already borne fruit, but much remains to be done. NNSA has adopted principles and procedures for improving discipline and accountability, outlined systems for integrating all aspects of the nuclear security business into its planning and budgeting processes, and begun the hard work of redesigning business processes to remove burdens and inefficiencies.

However, implementing the new initiatives outlined in this report remains before NNSA leadership. NNSA was created through the merger of elements within the Department of Energy, with the expectation that the new entity could attain a semiautonomous status that would overcome the limitations of the existing organizational structure. While the structure has changed, NNSA leadership recognizes that the task ahead is to change the culture. Behavior must line up with the new structure and procedures if the desired *effectiveness* and *efficiency* are to be obtained.

Fundamentally, the path forward to a new organizational culture involves the following:

- **Communicating the importance of changing behavior to achieve the desired results.** This *Organization Report* and NNSA's strategic plan are important steps in the process of communicating the leadership's expectations to employees; but for communication to be effective, it must be frequent and consistent. NNSA management will place a high value on communicating with employees.
- **Involving employees in the process of creating the desired future.** Working on reengineering efforts—including participation on change teams—will be encouraged

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<sup>21</sup> *120-Day Study*, p. IV-12.

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and rewarded. Previous, unsuccessful reform efforts were often perceived as a diversion from accomplishing the mission. NNSA's reforms can be successful by involving employees in creating a better way to do business.

- **Leadership modeling the behavior desired from employees.** Core values are most effectively communicated through behavior. NNSA's senior managers will be held to a high standard in following the new operating model.
- **Clear, consistent accountability for both positive and negative behavior.** The lack of accountability is the most consistent concern raised by both external and internal critics of the Department. NNSA's reforms will succeed by requiring its leadership to employ incentives and consequences, applying them consistently and fairly.



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**PART 2**

**ORGANIZATIONAL WORK PLANS:**

**DEFENSE PROGRAMS**

**DEFENSE NUCLEAR NONPROLIFERATION**

**NAVAL REACTORS**

**FACILITIES AND OPERATIONS**

**MANAGEMENT AND ADMINISTRATION**

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## Chapter I

### **Weapons Work Plan – Maintain and Enhance the Safety, Security, and Reliability of the Nuclear Weapons Stockpile to Counter the Threats of the 21<sup>st</sup> Century**

The nuclear weapons stockpile remains a cornerstone of U.S. national security policy. In 1993, the President and the Congress established the science-based Stockpile Stewardship Program (SSP), with the goal of maintaining high confidence in the safety, security, and reliability of the warheads in the stockpile, absent underground nuclear testing. The Stockpile Stewardship Program must:

- Predict, detect, and evaluate potential problems in the stockpile.
- Refurbish and remanufacture warheads and components, as required.
- Support focused, multifaceted efforts to increase the understanding of warheads in the stockpile.
- Maintain the capability to design, develop, manufacture, and certify new weapons in response to new national requirements.
- Maintain the ability to conduct an underground nuclear test, if required.
- Maintain the science and engineering institutions needed to support the national nuclear deterrent, now and in the future.

Deterrence depends on maintaining a robust and flexible nuclear weapons complex and exercising our capabilities to design, develop, fabricate, and certify warheads. Defense Programs retains line responsibility for maintaining a safe, secure, and reliable nuclear weapons complex.

The Stockpile Stewardship Program, managed by the Office of Defense Programs (DP), has both near- and longer-term aspects. Directed Stockpile Work (DSW) involves a wide range of activities designed to maintain the health of the stockpile. These activities come together in the form of life-extension refurbishments for warheads. Stockpile work is enabled by science and technology programs, called “campaigns,” that provide essential research and development in hydrodynamics, engineering science, materials science, high-energy-density physics, and simulation and computing to provide a sustained basis for future stockpile certification. The success of the SSP depends on a strong partnership with the Department of Defense. We share responsibility for advising the President, on an annual basis, as to the safety and reliability of the U.S. nuclear weapons stockpile.

To accomplish its goal, DP is using two key strategies:

- Conduct a program of warhead evaluation, maintenance, refurbishment, and production, planned in partnership with the Department of Defense.
- Develop the scientific, design, engineering, testing, and manufacturing capabilities needed for long-term stewardship of the stockpile.

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The SSP is executed at eight government-owned, contractor-operated sites: Los Alamos National Laboratory, Lawrence Livermore National Laboratory, Sandia National Laboratories, the Nevada Test Site, the Kansas City Plant, the Pantex Plant, the Savannah River tritium facilities, and the Oak Ridge Y-12 Plant. The national laboratories are multiprogram in nature and perform work supported by other elements of DOE and other federal agencies. NNSA's Defense Programs supports approximately 25,000 employees (out of a total of 55,000) at these eight sites. The SSP is guided by NNSA federal personnel at headquarters; overseen by federal personnel in field offices; and implemented by contractor personnel at the NNSA laboratories, the test site, and the production plants, who also provide expert input into planning and programming as part of the NNSA team.

**Fostering Science and Technology.** Responding to its enabling legislation, the NNSA must continue to foster basic science and technology development at its laboratories to ensure that these institutions retain their preeminent status in the scientific community. The laboratories' basic science and technology activities, such as improved understanding of fundamental properties of matter and development of advanced computing and simulation techniques, contribute to the long-term health of our nation and attract the wide array of scientific expertise needed to sustain our nuclear security mission.

A more detailed discussion of the two DP strategies follows.

### **A. Conduct a Program of Warhead Evaluation, Maintenance, Refurbishment, and Production, Planned in Partnership with the Department of Defense**

To carry out this strategy, DP has defined a Directed Stockpile Work (DSW) Program, which addresses activities that directly support the readiness of the nuclear weapons stockpile. It focuses on nuclear stockpile life-cycle management; maintains the nuclear deterrent, as specified in the Nuclear Weapons Stockpile Plan; and includes stockpile-related workload, policy guidance, coordination, and oversight of all activities that directly support stockpile requirements. DSW policy and program guidance is formulated within DP and implemented by a team comprising DP, the national laboratories, and the production plants, which together make up the nuclear weapons complex.

DSW encompasses a broad range of activities that focus on the reliability, surety, and performance of nuclear weapons. These activities include research, development, and production associated with weapons maintenance, surveillance, life extension, assessment and certification, baselining, dismantlement, design assessments, engineering, and production readiness across the nuclear weapons complex. DSW represents the programmatic foundation for setting current weapons system activities and implementing future weapons stockpile requirements.

#### **1. FY 2001 accomplishments**

- In direct support of the stockpile, NNSA and its laboratories, production plants, and test site accomplished the following in FY 2001:

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- Concluded the fifth annual assessment and certification of the safety and reliability of the nuclear weapons stockpile and identified no need to resume underground nuclear testing.
  - Met a critical DoD milestone with the W87 Recovery Schedule.
  - Reached agreement with DoD on life extensions for the B61 bomb and the W76 and W80 warheads.
  - Implemented a new, joint NNSA-DoD planning process for refurbishment of the nuclear weapons stockpile.
  - Exceeded the warhead dismantlement goal by 12 percent.
  - Conducted the 13<sup>th</sup> subcritical experiment at NTS, providing improved understanding of key aspects of the physics and aging properties of plutonium, necessary for qualification of aged and newly manufactured pits.

## **2. Plans for FY 2002 and beyond**

- Complete the 6<sup>th</sup> annual assessment and certification of the safety and reliability of the nuclear weapons stockpile.
- Meet W87 deliverables to the DoD.
- Meet W76, W80, and B61 life-extension milestones.
- Meet dismantlement goals (161 percent increase over FY 2001).
- Support the DoD in responding to revised requirements for nuclear weapons, as determined by the Administration's Nuclear Posture Review.
- Sustain the ability to respond to specific contingencies, such as a decision to resume designing and producing new weapons.

## **B. Develop the Scientific, Design, Engineering, Testing, and Manufacturing Capabilities Needed for Long-Term Stewardship of the Stockpile**

To carry out this strategy, DP has defined and is implementing a series of campaigns, which are technically challenging, multiyear, multifunctional efforts conducted across the Defense Programs laboratories, the production plants, and the Nevada Test Site (NTS). Campaigns are designed to develop and exercise specific, critical capabilities that are needed to sustain a viable nuclear deterrent. The goal of the campaigns is to provide the capabilities needed to address current and future stockpile issues by employing world-class scientists and engineers and by providing the most advanced scientific and engineering infrastructure. The campaigns provide a focus and a planning framework that enable the laboratories to sustain their scientific preeminence. Campaigns have milestones and specific goals designed to focus efforts in science and computing, applied science and engineering, and production readiness on well-defined deliverables related to the stockpile.

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## 1. FY 2001 accomplishments

- During FY 2001, to develop the scientific, design, engineering, testing, and manufacturing capabilities needed for long-term stewardship of the stockpile, NNSA has accomplished the following:
- Delivered 12+ teraOPS on the Accelerated Strategic Computing Initiative “White” supercomputer.
- Manufactured six development pits (i.e., the nuclear “trigger” used in a nuclear weapon).
- Completed conventional construction of the National Ignition Facility (NIF).
- Remained on track to deliver tritium gas, starting in FY 2006.
- Established a resource-loaded plan for production and certification of pits for the W88.
- Conducted first experiments at the Dual Axis Radiographic Hydrodynamic Test Facility.
- Developed advanced firing system technologies for the W80.
- Completed advanced electronic archiving of prompt diagnostic data for Nevada Test Site events.
- Developed and fabricated a radiation-hardened Static Random Access Memory in silicon on insulator for use by our weapons systems.
- Provided new diagnostic tools for surveillance of the stockpile.
- Completed a first-ever, three-dimensional, secondary-burn prototype simulation.

## 2. Plans for FY 2002 and beyond

- Manufacture two W88 development pits and several standard pits.
- Accept delivery of 30-teraOPS ASCI supercomputer at LANL.
- Break ground in FY 2002 for the Highly Enriched Uranium Storage Facility at Oak Ridge Y-12, which will become operational in FY 2005.
- Demonstrate a prototype three-dimensional, full-system, coupled simulation.
- Complete revision of the NIF Ignition Plan.
- Achieve optimum spot size on a DARHT I target.
- Begin assembly of tritium-producing burnable absorber rods to achieve tritium production by FY 2006.
- Provide new tritium in the inventory and a reliable tritium production source of sufficient capacity to support the nuclear weapons stockpile.
- Provide interim pit manufacturing capacity, sufficient to meet stockpile requirements.

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- Develop and implement enhanced surveillance and experimentally validated computational capabilities, sufficient to predict the timely onset and effects of aging on nuclear weapons' safety and reliability.
  - Develop improved understanding of experimentally validated, model-based weapons science.
  - Develop experimental capabilities sufficient to fully validate computational modeling for stockpile assessment and simulation.
  - Develop improved understanding of nuclear weapons' response to normal and abnormal environments.
  - Develop assured replication or replacement options and production capacity for weapon components in the stockpile.
  - Develop and implement an integrated, agile, and rapidly expandable design and production system to complete stockpile refurbishments in a timely manner.
  - Sustain the ability to respond to specific contingencies, such as a decision to resume nuclear testing, expanding tritium supply, and countering nuclear incidents.

### C. Challenges

During the coming decade, the NNSA will face a number of challenges as we refurbish the weapons in the nation's nuclear arsenal. We must counter the deterioration of the weapons complex and recruit and train the next generation of stockpile stewards to renew our aging workforce. Increasing pressure on the federal budget will require our diligence in effective planning, especially for the refurbishments of the B61 bomb and the W76 and W80 warheads. We must reestablish the ability to manufacture and certify pits for nuclear weapons, including developing a strategy and requirements for quantity pit production. We must keep on track our development and implementation of advanced experimental and computational capabilities to continue providing confidence in the annual assessment of the nuclear stockpile, absent nuclear testing. Newly produced tritium will be required by FY 2006 to ensure continued military effectiveness of our existing weapons. We must maintain the ability to conduct timely underground nuclear tests, if so directed. And, in all of these activities, we must achieve the proper balance among security requirements (both cyber and physical) and workload and facility requirements.

**Transition to science-based stewardship.** One of the most pressing SSP challenges is to complete the transition to science-based stewardship before nuclear test-experienced warhead designers retire. This is a race against time, because a new generation of weapons scientists and engineers must be trained and their competence validated before the current generation leaves the workforce. In today's tight market for technical talent, we are competing with the private sector for the best and brightest graduating from the nation's colleges and universities.

All of this work must be performed in accordance with today's more stringent environmental, safety, and health regulations to protect our workers and communities. Our work must also

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balance science and hardware requirements against the demands of security to properly safeguard the information and property entrusted to us.

**Supporting the stockpile.** The concept and basic strategies developed for the SSP are working, and we are achieving our vision. Using tools of the SSP, our scientists and engineers are solving problems within the stockpile that, in the past, would have required underground nuclear testing to resolve. However, considerable work remains to be done before we can determine whether the nation can rely indefinitely on science-based stewardship without additional underground nuclear testing.



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## Chapter II

### **Nonproliferation Work Plan – Detect, Prevent, and Reverse the Proliferation of Weapons of Mass Destruction while Promoting Nuclear Safety Worldwide**

Through its nonproliferation programs, the NNSA is a primary contributor to U.S. policy efforts to detect, prevent, and reverse the proliferation of weapons of mass destruction (WMD). NNSA has unique expertise in nuclear, chemical, and biological science and technology, including the world-class capabilities of our national laboratories. NNSA provides integrated technology solutions and policy expertise to a wide range of partners, including the Departments of Defense and State, the intelligence community, foreign allies, and international organizations.

The Office of Defense Nuclear Nonproliferation (NN) manages NNSA efforts to support U.S. national, bilateral, and multilateral endeavors to reduce the threat posed by the proliferation of weapons of mass destruction by implementing four strategies:

- Enhance the capability to detect WMD, including nuclear, chemical, and biological systems.
- Prevent and reverse proliferation of weapons of mass destruction.
- Protect or eliminate weapons and weapons-usable nuclear materials or infrastructure, and redirect excess foreign weapons expertise to civilian enterprises.
- Reduce the risk of accidents in nuclear-fuel-cycle facilities worldwide.

Following the breakup of the Soviet Union, the fourfold threats of excess weapons of mass destruction, unsecured materials, widely available technology, and underemployed scientific and weapons expertise make the nonproliferation efforts of Defense Nuclear Nonproliferation critical to U.S. national security. Some threats require an immediate response, while others involve long-term solutions. For example, NNSA is addressing the threat posed by the vast supply of nuclear materials, warheads, and expertise that resulted from the breakup of the Soviet Union. In addition, the NNSA nonproliferation program is working to deter countries of concern interested in expanding their nuclear energy programs for the purpose of developing nuclear weapons. NNSA is carefully coordinating programmatic work with other agencies because of potential legal or diplomatic ramifications.

The events of September 11, 2001, reinforce the importance of NNSA's nonproliferation programs and have resulted in a need for the acceleration of activities. Worldwide attention has focused on the sophistication of planning and execution by the terrorists and the lengths taken to fulfill their mission. In response, NN has performed a comprehensive examination of its programs to determine effective ways to accelerate security of nuclear weapons-usable materials; detect the deployment of WMD in the homeland and abroad; accelerate work with foreign partners to improve export control programs; prevent diversion of nuclear materials across foreign borders; and implement other measures to prevent materials, technologies, and expertise from assisting would-be terrorists.

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The NNSA nonproliferation program draws heavily on the results of basic science and technology development in the nuclear security complex. Innovative and unique technical solutions for detecting and monitoring proliferation have been, and continue to be, vital to U.S. national security. Results demonstrate the need for continued investment in the long-term science and technology base for nonproliferation, spanning the spectrum of nuclear, biological, and chemical research.

The NNSA is addressing the complex, multifaceted issue of nonproliferation comprehensively, with specific, realistic goals for each program. Defense Nuclear Nonproliferation (NN) programs address different problems and needs—while working toward the overarching goal of reducing the threat of WMD proliferation. The Administration reviewed each NNSA program that addresses concerns in the Russian Federation and determined that NNSA nonproliferation programs add value to the U.S. Government’s foreign policy. In combination with other U.S. Government nonproliferation programs, NNSA programs offer a value that is greater than the sum of their parts.

The detailed approach to accomplish the NNSA mission encompasses the following four strategies for success.

### **A. Enhance the Capability to Detect Weapons of Mass Destruction, Including Nuclear, Chemical, and Biological Systems**

The NNSA goal of integrating technology solutions and policy expertise is evident in the Nonproliferation and Verification Research and Engineering Program. This program advances the state of the art in detection technologies and delivers systems for detecting and deterring nuclear, chemical, and biological proliferation and for monitoring nuclear explosions. These resulting technologies and systems are transitioned to end users, including the Department of Defense, the U.S. intelligence community, and international organizations, to enhance the ability of the United States to respond to current and projected threats to national and international security.

The NNSA proliferation detection program has made progress in three major areas:

- Producing technologies that lead to prototype demonstrations and remote proliferation detection systems.
- Strengthening U.S. detection capabilities to respond to current and projected national security threats posed by WMD.
- Developing technologies for other government users, including the Department of Defense and the intelligence community.

The NNSA proliferation detection program is building robust technical capabilities to develop unattended and handheld monitoring technology, which can shape U.S. diplomatic efforts that rely upon verification and confidence-building measures. It is also improving forensic capability to identify the origin of associated fissile materials in the event of a potential nuclear threat. Nuclear explosion-monitoring research and engineering has three components: detect very-low-yield events, especially those that might arise from proliferant nation efforts; develop, engineer, and deliver satellite-based systems to the Air Force; and

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deliver ground-based systems as state-of-the-art hardware and software products for seismic, hydroacoustic, infrasound, and radionuclide technologies.

In addition, the NNSA Chemical and Biological National Security Program is developing, demonstrating, and delivering technologies and systems to strengthen the U.S. capability to prepare for, and respond to, chemical or biological attacks against civilian populations through nonmedical technical solutions. Systems developed by this program have been deployed in the aftermath of the September 11 attack on the United States.

### **1. FY 2001 accomplishments**

During FY 2001, NN's proliferation detection programs accomplished the following mission-related goals:

- Demonstrated a half-scale biological agent detection system for large outdoor sporting events.
- Launched the first of a new generation of x-ray sensors and environmental dosimeters for U.S. nuclear explosion-monitoring capability.
- Received the R&D 100 Award for new crystal growth technology for producing radiation sensors.
- Demonstrated highly accurate thermometry from space with the Multispectral Thermal Imager and provided multispectral data to many users.

### **2. Plans for FY 2002 and beyond**

- Develop and test technologies for detecting terrorist and proliferation activities involving WMD, and transition those capabilities to responsible user agencies.
- Perform increased DNA sequencing and assay development for an increased number of biological threat agents, and develop the concomitant detection technologies.
- Improve detection capability and response time for a wide range of chemical threat agents.
- Improve the sensitivities of nuclear explosion-monitoring capabilities, providing improved technologies to the responsible monitoring agencies.

## **B. Prevent and Reverse Proliferation of Weapons of Mass Destruction**

NNSA programs provide policy support through technical leadership to limit and prevent WMD proliferation and development. No other U.S. Government agency has the breadth of expertise in nuclear weapons and material properties, handling, security, production, disposition, and identification. For example, the NNSA provides substantial support for various multilateral inspection and verification organizations to enable them to better manage inspections and curb illegal technology flows. NNSA provides support to various national and international organizations and foreign governments for on-site inspections, unattended monitoring, physical security, materials measurement, accounting, transparency, and curbing illegal technology flows.

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## 1. FY 2001 accomplishments

- Completed canning of 3,000 spent nuclear fuel rods, in conjunction with the government of Kazakhstan and the International Atomic Energy Agency (IAEA).
- Secured 30 kilograms of weapons-grade plutonium contained in spent nuclear fuel at Nyongbyon, North Korea, and placed it under IAEA safeguards for monitoring.
- Hosted the Nuclear Suppliers Group (NSG) Plenary and assumed chairmanship of NSG.
- Provided technical papers and participated in the Administration's review of U.S. policy toward the Agreed Framework and North Korean Missile Restraint.
- Established a memorandum of understanding with the United Kingdom for development of nuclear verification technologies.

## 2. Plans for FY 2002 and beyond

- Develop and implement a strategy for promoting broad acceptance of additional protocols to strengthen the international safeguards system.
- Provide the IAEA with technology and resources to respond to increasing requirements to safeguard plutonium reprocessing in Japan.
- Develop low enriched uranium (LEU) fuels, and convert research reactors to LEU.
- Accelerate development of WMD export controls in Russia, the New Independent States, and elsewhere.
- As chair of the Nuclear Suppliers Group, develop a strategy to expand membership and promote dialogue with nuclear-capable, nonmember states.
- Assist U.S. interagency activities to enforce WMD-related sanctions against Iraq.
- Establish new procedures in conjunction with the Department of State and the government of North Korea, and participate in two field missions to North Korea to maintain status of spent fuel in the Nyongbyon spent fuel facility.

Finally, with the completion of a major milestone in the packaging of North Korea's spent fuel, the NNSA must assist the IAEA in the implementation of verification of, and international safeguards over, the spent fuel and prepare plans to support its future shipment and disposition.

## C. Protect or Eliminate Weapons and Weapons-Usable Nuclear Materials or Infrastructure, and Redirect Excess Foreign Weapons Expertise to Civilian Enterprises

Unique NNSA nonproliferation capabilities are demonstrated by programs to (1) dispose of surplus U.S. plutonium and highly enriched uranium and (2) assist the Russian Federation and other countries to reduce the proliferation dangers posed by poorly secured nuclear weapons, materials, and associated Soviet-legacy infrastructure.

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The key to a rogue nation's success in producing a nuclear device is the availability of fissile materials. NNSA threat reduction programs reduce the amount of materials potentially available through theft or diversion to unauthorized third parties. Because of its mandate for managing, securing, and accounting for nuclear weapons and materials in the U.S. weapons complex, NNSA has the experience to assist the Russian Federation to improve the security of its nuclear weapons and materials.

In addition, NNSA programs leverage the experience gained from communities (such as Richland, Washington) that adjusted to employment reductions as part of downsizing the U.S. weapons production complex. NNSA now enlists leaders from these communities to assist the Russian Federation in commercializing "closed cities" to help reduce its immense weapons complex. Forward-looking efforts include implementing procedures to dispose of excess U.S. and Russian weapons plutonium and highly enriched uranium; securing weapons and fissile materials; and building consensus for a transparent, bilateral nuclear warhead dismantlement regime.

### **1. FY 2001 accomplishments**

- Completed rapid security upgrades on 3,600 at-risk nuclear weapons in the Russian Federation.
- Eliminated more than 2.9 metric tons of highly enriched uranium (HEU) under the pilot Material Consolidation and Conversion Project.
- Completed the agreement between NNSA and the Ministry of Atomic Energy to close the Avangard nuclear weapons production facility.
- Attracted more than \$50 million of venture capital funding for five Initiatives for Proliferation Prevention Projects, employing technologies from energy production, mobile telecommunications, and sensors for improved health care.
- Eliminated 30 metric tons of Russian weapons-usable uranium under the auspices of the U.S.-Russian Federation Highly Enriched Uranium Purchase Agreement.
- Completed Title I and initiated Title II design for the Mixed Oxide Fuel Fabrication Facility, planned to be built at the Savannah River Site in order to support disposition of U.S. plutonium.
- Completed an agreement with the Tennessee Valley Authority to blend down more than 30 metric tons of U.S. "off-spec," highly enriched uranium for peaceful use as reactor fuel.
- Completed the arrangements for implementation of the blend-down monitoring system at the Ural Electrochemical Integrated Enterprise at Novouralsk, Russia.

### **2. Plans for FY 2002 and beyond**

- Accelerate rapid and comprehensive upgrades on at-risk plutonium, highly enriched uranium, and naval nuclear weapons at Russian sites, in response to the September terrorist attacks.

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- Accelerate the Second Line of Defense Program deployment of special nuclear materials detection equipment at strategic Russian border crossings.
  - Install blend-down monitoring system equipment at a second Russian facility to support the HEU Purchase Agreement.
  - Expand the Material Consolidation and Conversion Project from a pilot to a fully deployed program.
  - Reduce Avangard nuclear weapons assembly production floor space by making it available for commercially focused projects.
  - Commence work with former Soviet weapons institutes that NNSA has not previously engaged.

While NNSA cooperation with Russian partners has been successful overall, efforts to protect, redirect, manage, and eliminate weapons-usable assets in the coming year face several challenges. The NNSA must gain support and commitment from the Russian government and other participants on its restructured approach to plutonium disposition while limiting costs and risks to the United States. Programs requiring access to sensitive Russian facilities must have approval from the Russian Ministry of Atomic Energy to perform work.

The Material Protection, Control, and Accounting Program has signed access agreements to ensure adequate oversight of projects, paving the way for new work and access by NN project teams. Negotiations are in process on Material Consolidation and Conversion and Nuclear Cities Initiative Agreements, which are needed to significantly expand and accelerate the work already under way.

## **D. Reduce the Risk of Accidents in Nuclear-Fuel-Cycle Facilities Worldwide**

Another strategy for enhancing nuclear security is to reduce the risk of accidents at nuclear facilities worldwide. NNSA is currently reducing safety risks at the 70 operating Soviet-designed nuclear power reactors in nine countries through the International Nuclear Safety and Cooperation Program. The plan is to complete safety upgrades for these reactors by 2005. Three plutonium production reactors, the oldest operating reactors in Russia, will operate until replacement capacity is ready (in about 2006). Because these reactors have not received any safety upgrades to date under foreign cooperation, they are NNSA's highest priority for safety upgrades in FY 2002. During FY 2002, NNSA will establish a new program that will not be limited to Soviet-designed reactors. The new program will address critical nuclear safety issues worldwide in countries of concern through an integrated and risk-based approach.

### **1. FY 2001 accomplishments**

- Completed two control-room simulators, three safety parameter display systems, and one in-depth safety assessment to improve safety.

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- Provided technical leadership that contributed to the shutdown of the Chernobyl reactor and the operational success of the Chernobyl replacement heat plant, which provides hot water and steam to the Chernobyl industrial site, thus enabling the operation of essential waste management facilities and safety systems supporting the shutdown.
  - Assisted Ukraine in establishing an emergency management training program to ensure an effective response to a nuclear incident involving a nuclear power plant in that country.

## **2. Plans for FY 2002 and beyond**

- Develop and gain acceptance and initiate the implementation strategy for the cessation of weapons-grade plutonium production at the reactors at Seversk and Zheleznogorsk.
- Improve safety at the three plutonium production reactors in Russia.
- Complete one full-scope nuclear plant control-room simulator training facility in each of three countries: Russia, Ukraine, and Slovakia.
- Assist the government of Kazakhstan to complete the shutdown of its BN-350 reactor by draining contaminated sodium from the facility.
- Work with international organizations to promote development of compatible worldwide emergency management systems.
- Provide assistance to developing countries in establishing, improving, and maintaining a nuclear emergency response program.
- Enhance cooperation with the United Kingdom, France, Germany, Switzerland, the Nordic countries, Japan, and South Korea on programs that respond to and mitigate any nuclear incident.

## **E. Challenges**

NNSA nonproliferation programs strengthen U.S. national security by providing nonproliferation, arms reduction, and counterterrorism policy options and technologies. Following the September 11 terrorist attacks, a heightened importance of the work of Defense Nuclear Nonproliferation for U.S. national security has been articulated from the Congress, the Administration, and the nongovernmental community. Efforts to accelerate deterrence and detection technology development, nuclear weapons and materials security and elimination, and redirection of WMD expertise to commercial efforts are critical to prevent the resources for WMD production from transferring to terrorists.

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## Chapter III

### **Naval Reactors Work Plan – Provide the Navy with Safe, Militarily Effective Nuclear Propulsion Plants and Ensure their Continued Safe and Reliable Operation**

**Mission.** The primary mission of the Office of Naval Reactors (NR) is to provide the U.S. Navy with safe, militarily effective nuclear propulsion plants and to ensure their continued safe and reliable operation. Naval Reactors is responsible for all naval nuclear propulsion work, beginning with technology development, continuing through reactor operation and, ultimately, reactor plant disposal. Naval Reactors ensures the safe operation of reactor plants in operating nuclear-powered submarines and aircraft carriers (constituting 40 percent of the Navy’s major combatants) and fulfills the Navy’s requirements for new nuclear propulsion plants that meet current and projected national defense requirements.

Naval Reactors is principally a technology program in the business of power generation for military application. The program’s long-term development work ensures that nuclear propulsion technology provides options for maintaining and upgrading current capabilities, as well as for meeting future threats to U.S. security. Work is integrated as advances in various functional disciplines coalesce into the technology applicable to a naval nuclear plant. The very nature of nuclear work dictates a careful, measured approach to developing and verifying nuclear technology; designing needed components, systems, and processes; and implementing them into existing or future plant designs. Intricate engineering challenges and long lead times to fabricate the massive, complex components require many years of effort before technological advances can be introduced into the Fleet.

Three strategies for NR are as follows:

- Ensure the safety, performance, reliability, and service life of operating reactors.
- Develop new technologies, methods, and materials to support reactor plant design for the next-generation reactor for submarines and aircraft carriers.
- Maintain outstanding environmental performance.

Naval Reactors ensures the safe and reliable operation of the Navy’s 102 operating reactor plants. To accomplish this, work focuses on design, analysis, and testing of reactor plant components, systems, and performance to identify and address potential problems before they occur and ensure that plant technology can withstand increased operational demands. In addition, NR thoroughly trains all naval reactor plant operators.

Naval Reactors is also continuing shipboard acceptance testing on the next-generation reactor for the Navy’s new VIRGINIA-class attack submarines and is developing the reactor for the Navy’s new CVNX-class aircraft carrier. For submarines, nuclear propulsion provides stealth, mobility, and uncertainty in the mind of a potential adversary; for aircraft carriers, nuclear propulsion provides sustainability, mobility, and increased armament capability.

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The reputation of NR around the world as a first-class program demands outstanding environmental performance. To protect the health and safety of workers, the public, and the environment, the program enforces strict compliance with requirements for the management and disposal of radioactive, hazardous, and mixed waste. Additional procedures are in place to ensure full compliance with evolving environmental requirements. The principal focus of this environmental work is to prevent the creation of environmental hazards by minimizing wastes and preventing pollution.

## **A. Ensure the Safety, Performance, Reliability, and Service Life of Operating Reactors**

### **Strategic Indicators**

- Achieve reactor plant performance and core lifetime that support extended lives of selected LOS ANGELES-class submarines (33 years), OHIO-class submarines (42 years), and aircraft carriers (about 50 years).
- Develop reactor core and reactor component/system design and technology to support operating naval reactors (currently 102).
- Maintain a utilization factor of at least 90 percent for test reactor plants.
- Achieve an annual average of 2 million miles safely steamed for nuclear-powered ships to meet national security requirements.
- Provide laboratory support for increasing refueling workload, which will more than double over the next five years.

Contributing to the Department's overarching mission of national security, DOE, through the Office of Naval Reactors, continues to ensure the safety, performance, and reliability of operating reactors in aircraft carriers and submarines. The sustainability, mobility, and stealth of nuclear vessels have proven invaluable in the ongoing war on terrorism.

As the Navy downsizes the Fleet, demands on remaining ships increase. Each ship must carry more of the burden, be on line more of the time, and stay in service longer. Examples of the increasing demands can be seen in the tempo of military operations worldwide, including Afghanistan, Bosnia, the Arabian Gulf, and the Far East. To support these operational demands, materials, components, and systems must be operationally reliable for longer periods than ever before. For example, plants originally designed for a 20-year service life are now being called upon to serve up to about 50 years. Exhaustive testing, analysis, performance enhancements, and development efforts are needed so that component and system endurance—despite mechanical strain and wear, as well as potential corrosion due to stress and irradiation—can be ensured throughout an extended lifetime.

Reactor development efforts to date have yielded significant advantages. Enhanced component reliability and improved predictive techniques have allowed the Navy to extend the intervals between major maintenance periods, increasing ship on-line time and the Navy's warfighting capability while reducing cost. However, these advancements also generate new

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challenges. For example, the longer intervals between maintenance periods reduce opportunities to examine/replace aging components and systems; therefore, more extensive analysis and testing are required to verify materials and component performance. In a similar vein, development of a life-of-the-ship core offers major advantages in terms of ship availability, as well as reducing cost, radiation exposure, and waste generation; but a life-of-the-ship core also reduces midlife opportunities to examine components and help ensure integrity; therefore, testing and verification are of paramount importance.

These efforts are especially challenging, given the demanding nature of nuclear propulsion technology. Components and materials must perform reliably within the harsh environment of a reactor plant. Comprehensive and rigorous analyses are needed to ensure the ability to withstand the deleterious effects of wear, corrosion, high temperature, and pressure over a lifetime measured in decades. In addition, naval reactor plants must be rugged enough to accommodate ships' pitching and rolling; have the resilience to respond to rapidly changing demands for power; be robust enough to withstand the rigors of battle; and be safe and easily maintainable for the sailors who live next to them.

Naval nuclear power plants operate over lifetimes of up to five decades. Challenges to the reliability and integrity of the plants change and grow over this long life. Continuous monitoring and analyses are thus vital to ensure that they continue to perform safely and reliably. New knowledge gained during the years of operation must be assessed against the operating plants.

Utilization factor is a measure of prototype and Advanced Test Reactor (ATR) availability for planned testing, training, or maintenance. Prototypes provide platforms for conducting testing under actual operating conditions that cannot be duplicated in the laboratory, while ATR provides the unique capability to irradiate test specimens, which are then examined to provide data on the effects of radiation on materials. To meet the 90 percent goal, NR must be forward thinking in identifying potential problems before they occur.

Because nuclear-powered warships account for such a large portion of the Navy's combatant fleet, the successful operation of their reactor plants is a key factor in the Navy's ability to perform its national defense role. The safety record of the Naval Nuclear Propulsion Program is outstanding: nuclear-powered warships have steamed more than 122 million miles without a reactor accident or a significant release of radioactivity into the environment. The continued ability of the Navy to achieve an annual average of 2 million miles for nuclear-powered ships is dependent on continuance of this record.

Naval Reactors ensures that the feasibility of defueling and refueling operations is taken into consideration as part of design and development of new reactor cores. Work focuses on the next-generation submarine reactor and evaluation of CVNX core and reactor equipment designs to enhance reactor fueling, maintenance, and defueling capability. Specifically, NR is progressing well on the next-generation reactor servicing design, a design whose serviceability should decrease servicing costs.

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## **B. Develop New Technologies, Methods, and Materials to Support Reactor Plant Design for the Next-Generation Reactor, Submarines, and Aircraft Carriers**

### **Strategic Indicators**

- Meet the reactor plant design schedule to support the lead VIRGINIA-class ship delivery in 2004 and the CVNX-class ship construction start in FY 2006.
- Accomplish planned core and reactor component and system design, as well as technology development efforts to support future national security demands.

The VIRGINIA-class plant will provide needed capability for the 21<sup>st</sup> century at an affordable price. This plant encompasses advanced component and system technology—including the first core designed from the ground up to be a life-of-the-ship core and a simplified plant arrangement with fewer components compared with previous designs. The lead submarine in this class is expected to go to sea in 2004; therefore, it is essential that the NR propulsion plant development support the Navy's aggressive construction schedule. As issues arise regarding the reactor plant, NR must be prepared to move quickly and decisively to prevent problems from becoming critical-path items on the construction schedule. As work to support the VIRGINIA-class plant ramps down, NR is increasing general efforts to develop improved core technologies and reactor plant concepts and determine how these improvements would support an advanced VIRGINIA-class variant. For example, NR is beginning work on a high-energy transformational technology core to meet higher operational demands and further military requirements.

Naval Reactors is designing and developing an overall new reactor for the new CVNX-class aircraft carriers. This design represents a critical leap in capability; not only will the CVNX reactor enable the Navy to meet current forecasted operational requirements, but just as important, it will provide flexibility to deal with unanticipated warfighting needs in the future. The CVNX reactor will provide approximately 25 percent more energy than the reactors in NIMITZ-class ships and will have more than triple the electric power available, but will require just half the number of sailors to operate and will be easier to maintain. By contrast, the reactors used in the current NIMITZ-class ships are a 1960s design and have no more margin for growth in power output. This means that NR can no longer incorporate all the technical advances that would provide substantial life-cycle cost savings, improved survivability, greater operational availability, better offensive capability, and more strategic flexibility.

The CVNX lead ship is expected to be authorized in 2007 and to go to sea in 2014. The time to develop the reactor is constrained; therefore, development is a challenge. The constraint results from the time span needed by the Navy to have vendors fabricate the large and complex propulsion plant components to demanding quality standards and to have the shipbuilder incorporate these components into the ship. The location of the propulsion plant in the ship means that the shipbuilder needs the components early in construction.

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## **C. Maintain Outstanding Environmental Performance**

### **Strategic Indicators**

- Ensure that no personnel receive radiation exposures that exceed federal limits.
- Ensure that no significant findings result from environmental inspections from state and federal regulators.
- Achieve planned remediation milestones at all NR sites.
- Meet commitments to state and other officials on handling and processing spent nuclear fuel.

Naval Reactors continues to have an outstanding environmental performance record. Despite today's stricter government regulations, NR cleans up after itself in a rigorous, environmentally safe, and correct manner—including properly maintaining its facilities. Naval Reactors has established environmental compliance programs to meet all applicable regulations directed toward environmental excellence. This includes areas such as remediation of historical facilities, emphasis on recycling and waste minimization, strict standards for air and water emissions, and monitoring programs to validate that NR activities have no adverse effect on the environment.

When properly and diligently dealt with, nuclear propulsion is a safe, efficient power source and is environmentally less damaging than other sources. With regard to radiation, NR has an aggressive program to minimize exposure to as low a level as reasonably achievable, such that, since 1980, no NR personnel have received more than two rem in any one year.

## **D. FY 2001 Accomplishments**

- Achieved more than 2 million miles safely steamed for nuclear-powered ships—exceeding 122 million miles over the life of the program.
- Safely operated 102 reactors worldwide—accumulated more than 5,200 reactor-years of safe operations.
- Maintained a utilization factor of at least 90 percent for test reactor plants.
- Completed the vendor component development work on reactor plant components for the VIRGINIA-class attack submarines.
- Completed the system descriptions that define the basic design of the CVNX reactor plant.
- Ensured that no personnel exceeded federal limits for radiation exposure.
- Received no significant findings from environmental inspections by state and federal regulators.

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## **E. Plans for FY 2002 and Beyond**

- Ensure that CVNX- and VIRGINIA-class core design lives meet service life requirements and flexibility through testing, analytical modeling, and extensive engineering analyses.
- Continue reactor plant performance and core lifetime support for the extended lives of aircraft carriers and submarines.
- Improve accuracy of core lifetime performance models by applying improved physics methods, modeling procedures, and reactor core cross-section data.
- Develop, test, evaluate, and qualify economically attractive materials with improved physical or nuclear characteristics to support core life expectations of more than 30 years.
- Conduct high-temperature and -pressure testing of new, potentially more robust reactor plant materials, using corrosion-potential monitoring.
- Design and fabricate preproduction generic instrumentation and control equipment for the NIMITZ and LOS ANGELES classes.
- Test advanced instrumentation and control equipment in the prototypes to verify its operability and serviceability before Fleet implementation.
- Conduct DIG pressure vessel removal operations, begin DIG reactor compartment disassembly, and dispose of minor reactor plant components and waste.
- Develop the Transformational Technology Core to achieve a significant lifetime increase and greater operational flexibility over the next-generation reactor for insertion into a VIRGINIA-class ship.

## **F. Challenges**

- Continue safe and reliable operation of an aging fleet of aircraft carriers and submarines, along with aging facilities and prototypes.
- Maximize reactor service lives by using the latest core life and core structural material analyses, enhancing component reliability, and improving predictive techniques—thereby reducing overall maintenance requirements and extending the intervals between major maintenance availability periods.
- Provide propulsion plant development for the VIRGINIA-class submarine to support the Navy's aggressive construction schedule, which calls for a 2004 delivery.
- Develop the nuclear propulsion plant for the Navy's new CVNX-class aircraft carriers, in support of a 2006 authorization and 2013 delivery.
- Move all spent naval nuclear fuel to dry storage in preparation for final disposal in a permanent repository.

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## Chapter IV

### **Facilities and Operations Work Plan – Ensuring the Vitality and Readiness of the NNSA’s Nuclear Security Enterprise**

One of NNSA’s key goals is to ensure the vitality and readiness of the NNSA nuclear security enterprise. Our nuclear weapons enterprise must be efficient, appropriately sized, flexible, and professionally managed. We must maintain and enhance our operational readiness to fulfill our mission, to provide a credible nuclear deterrent, and to help recruit and retain our uniquely skilled workforce.

To this end, the NNSA has created a new organizational component, Facilities and Operations (F&O). The role of F&O has evolved in two areas since the *May Report* was issued. First, the *May Report* proposed that field managers would report to the Associate Administrator for Facilities and Operations. As discussed earlier in this report, NNSA has chosen a new field structure in which NNSA Site Office managers will report through the Deputy Administrator to the Administrator. Second, the role of F&O in facilities and infrastructure management has changed: it will *not* be responsible for assuring operational readiness. That responsibility remains with the cognizant program organization.

The revised functions are described below:

- As the advocate for weapons complex stewardship, develop the NNSA strategy, priorities, and funding requirements to improve operational capability, security, and safety.
- Assure performance of NNSA facilities and operations, focusing on safety, security, and capability.
- Manage the Facilities and Infrastructure Recapitalization Program to restore, rebuild, and revitalize the physical infrastructure.
- Manage implementation of NNSA safeguards and security programs.
- Integrate project management best practices with program facilities planning and acquisition.
- Ensure that program organizations integrate safeguards and security, as well as environmental, safety, and health concerns, into NNSA mission activities.
- Coordinate policy and directives streamlining, contractor evaluation, and federal field resource allocation.

#### **A. Restore, Rebuild, and Revitalize the Physical Infrastructure and Maintain Mission-Capable Facilities to Ensure the Safety, Security, and Reliability of the U.S. Nuclear Weapons Stockpile and to Contribute to a Credible Nuclear Deterrence**

The NNSA goal of ensuring the vitality and readiness of the its nuclear security enterprise can be achieved only when the facilities that support these activities are in good operating

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condition. Over the past decade, many elements of the physical infrastructure of the complex deteriorated significantly, as scarce resources were focused on mission accomplishment. We must restore, rebuild, and revitalize much of the infrastructure and facilities that make up the nuclear weapons complex—not only to support the NNSA mission but also to attract and retain the technically qualified staff that we need.

Numerous panels and studies, both internal and external to NNSA, have identified significant issues associated with the condition of nuclear facilities. The complex is old: almost half of the existing facilities are 50 years of age or older. The condition of the complex is deteriorating: more than 70 percent of the structures are in need of significant repair.

The state of the complex poses an urgent problem. As the Panel to Assess the Reliability, Safety, and Security of the United States Nuclear Stockpile (the Foster Panel) reported to Congress, “After more than a decade of under-investment in the weapons complex, it is at unacceptably high risk. . . ; parts of the complex infrastructure are defective; the production capabilities that remain are fragile.”

To address this problem, the NNSA has created an Office of Infrastructure and Facilities Management (I&FM) in the Facilities and Operations component. I&FM will both ensure that a corporate facilities management program is implemented and facilitate recapitalization of the NNSA infrastructure. The I&FM objectives for corporate facilities management, recapitalization, and emergency management follow:

- Establish a senior advocate for the requirements of the nuclear weapons complex facilities.
- Institutionalize professional and accountable corporate facilities management activities throughout NNSA, and provide technical assistance and mentoring on all aspects of facilities management to the programs and field.
- Establish NNSA corporate facilities management policies, and conduct independent internal assessments to assure the Administrator that policies are being implemented and executed by the programs and field, adopting proven industry standards where possible.
- Develop and manage the Facilities and Infrastructure Recapitalization Program and budget.
- Advocate that the programs provide appropriate resources to restore the complex.
- Ensure that emergency readiness assurance is performed, including emergency response and training, in support of the Department’s emergency management program.

## **1. Accomplishments**

- Formulated a multiyear Facilities and Infrastructure Recapitalization Program to restore the complex to an acceptable level and to arrest the growing deterioration of facilities. NNSA estimates that \$500 million per year will be required for at least a decade to restore, rebuild, and revitalize the physical infrastructure.



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- Developed a complex-wide Prioritized Project List (PPL). The PPL captures the backlog of maintenance, repair, and upgrade projects in need of funding. This list contains more than 180 projects that total \$564 million.
  - Executed an FY 2001 Supplemental Appropriation of \$8.7 million as a first step in recapitalizing the complex. Eleven maintenance projects selected from the PPL are being carried out across the complex.
  - Developed a project execution plan for the FY 2002 Facilities and Infrastructure Recapitalization Program to ensure accountability for each project funded under the Initiative.
  - Implemented a corporate facilities management planning process that resulted in the submission of ten-year comprehensive site plans.
  - Developed FY 2002 performance measure incentives for M&O contractors that emphasize facilities management.
  - Adopted a restructured replacement plant value model to calculate the present value of facilities throughout the Department. The NNSA uses this measure to determine whether facilities are receiving appropriate management attention.

## **2. Plans for FY 2002 and beyond**

We will focus on steps that implement the plans, programs, and actions necessary to correct the condition and capability of the deteriorating complex.

**Institutionalize corporate facilities management.** We will continue institutionalizing corporate facilities management processes that will be developed within the NNSA or adopted from other successful facilities management programs throughout the government, academic, and private sectors. We will conduct internal independent assessments of the programs and field to assure the Administrator that these policies are being implemented.

Ten-year comprehensive site plans will establish the foundation for the strategic planning of facilities and infrastructure requirements of the complex. The ten-year comprehensive site plans translate the technical requirements of the programs and the infrastructure needs of the site into plans for managing the physical assets of the NNSA within the financial constraints of the current budget and the Future Years National Security Plan. We will evaluate the programs' implementation of the plans during our internal independent assessments.

We will tie refurbishment to collapsing the existing footprint, with special attention given to both Oak Ridge Y-12 and the Los Alamos National Laboratory, where disposal efforts provide a positive return by reducing cost and the number of secure areas. We will focus on corporate planning for future recapitalization projects. We will also provide technical assistance on all aspects of facilities management to the programs and field.

Implement the Facilities and Infrastructure Recapitalization Program. Congress appropriated \$200 million in FY 2002 for recapitalization of the nuclear weapons complex. These funds will support 53 separate projects designed to arrest deterioration of NNSA facilities and reduce the backlog of maintenance and repair projects. These projects include maintenance and repair activities to begin recovery of the physical complex, planning and preparation for

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future refurbishments, and the disposal of excess facilities, which will realize the reduction of some 500,000 square feet of space as the NNSA reduces its overall footprint.

**Establish financial accountability.** To improve the nuclear weapons complex, we will establish financial accountability in the corporate facilities management process.

**Support and implement emergency management.** We will support the development of an emergency management system and relationships between the NNSA and DOE at headquarters. We will implement an emergency management system that covers missions, functions, responsibilities, and processes as they relate to planning, preparedness, readiness assurance, and emergency response at NNSA headquarters.

### **3. Challenges**

**Embrace a corporate approach.** As in any large organization undergoing significant change, we face the internal challenge of integrating and prioritizing the many competing desires for limited resources, where hard decisions have to be made for the good of the entire organization. This applies, in particular, to the budding partnership between Facilities and Operations and Defense Programs, as well as the relationship between the field and headquarters. The strong teamwork established by the Facilities and Infrastructure Assessment Team over the past 15 months demonstrates that corporate governance can be successful within NNSA.

**Obtain the necessary resources.** Our ability to implement the Facilities and Infrastructure Recapitalization Program to improve the overall condition of the nuclear weapons complex depends on congressional support for our budget requests.

## **B. Integrating Project Management Best Practices with Program Facilities Planning and Acquisition**

NNSA decision makers oversee the acquisition of millions of dollars of infrastructure and facilities to support the nuclear security enterprise. Over the past decade, the DOE has been criticized for its lack of organization-wide project management policy, lack of preproject planning guidelines, lack of clear lines of responsibility and authority for project decisions, inadequate change control processes, ineffective use of available project management tools (such as earned value management and risk analysis), and failure to develop project management skills in its personnel.

To address these problems, the NNSA has created an Office of Project Management and Engineering Support (PMES), reporting to the Associate Administrator for Facilities and Operations. PMES is responsible for implementing the NNSA project management improvement campaign with the following goals:

- Provide technical assistance and mentoring on all aspects of project and construction management to the programs and field.
- Bring preproject planning into alignment with modern practices.
- Develop fully qualified project managers through improved training.
- Establish common, complex-wide project management procedures.

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- Seek full—rather than incremental—funding for projects so that they may proceed without schedule interruptions.
  - Implement the DOE Office of Engineering and Construction Management/Defense Programs (OECM/DP)-developed system of formal decision points and reviews.
  - Create incentives that will result in improved individual and organizational performance.

## 1. Accomplishments

### **Implemented an NNSA-wide system of formal decision points and project reviews.**

During FY 2001, PMES completed NNSA's implementation of a DOE-wide formal decision process for capital- and expense-funded line-item projects. The new system integrates the process of executing nonadvocate reviews: quarterly project status reviews with in-depth analysis of project execution requests through the Energy Systems Acquisition Advisory Board (ESAAB) critical decisions.

**Launched preproject planning campaigns.** NNSA conducted two significant workshops during FY 2001, with some 400 attendees. The theme of the workshops was to enlighten NNSA senior management on requirements for creating competent project management organizations and teams, to define the requirements for senior management engagement in projects, and to identify preproject planning best practices and expectations.

**Integrated congressionally mandated project reviews with critical decisions.** NNSA's PMES organization completed 17 independent project reviews (IPRs) during the fiscal year. The recommendations resulting from such reviews are then shared with the entire nuclear security enterprise through the NNSA project management website, lessons learned, and references in future reviews and critical decisions.

## 2. Plans for FY 2002 and beyond

**Provide project teams with "just-in-time" training.** We will implement a training program for integrated project teams to disseminate "best practices" for preproject planning, lessons learned, integrated safety management, risk management, and requirements development.

**Develop fully qualified project managers through improved training.** We will offer training as a "Project Management Institute (PMI)-Certified Education Provider" to NNSA senior managers, project managers, program managers, and contractors.

**Establish common, complex-wide project management procedures.** NNSA will work with the DOE Office of Engineering and Construction Management to complete the formal issuance of the DOE "Program and Project Management" and "Project Management Practices" manuals.

## 3. Challenges

**Embrace a change in corporate culture.** The major challenge in improving project management within the NNSA is changing the culture by which the organization does

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business; however, NNSA is committed to fostering a culture within the organization that reinstates trust, promotes integrated planning and execution by teams, and embraces and adopts change as soon as possible.

**Obtain the necessary technical capabilities.** Our ability to implement the project management improvement campaign depends on identifying adequate resources in the form of trained federal project managers, engineering support at the M&O and federal level, enhanced training programs, and establishment of mentoring programs incorporating best practices from the public and private sectors.

## **C. Integrate Security and Counterintelligence into NNSA Mission Activities**

Our approach to security and counterintelligence (CI) must be integrated, consistent, and complex-wide. In addition, we must make sure that the scientific culture and the security/counterintelligence culture are integrated. Our security policies must be sensitive to the environment in which we operate and help further our mission.

Much of the materials and information handled by the NNSA requires the highest level of protection. In light of a changing world environment, the NNSA must be able to identify and quickly implement the proper level of security. NNSA must also be alert to efforts by foreign intelligence services and terrorist organizations to gather sensitive and/or classified information. Security and counterintelligence work in a complementary fashion to ensure the protection of NNSA personnel, resources, and materials.

### **1. Safeguards and Security Program**

The Office of Defense Nuclear Security—a staff component to the Administrator—ensures that NNSA policies and procedures are in place to protect nuclear materials and information.

Oversight is accomplished by the Office of Nuclear Safeguards and Security Programs (NSSP) within Facilities and Operations. NSSP has the following core functions:

- Managing NNSA’s headquarters security.
- Ensuring that field elements provide proper oversight of contractor security activities.
- Conducting program reviews of safeguards and security implementation across the NNSA, developing the safeguards and security budget, and working directly with field offices and contractors to ensure that the budget is adequate to provide cost-effective security.
- Reviewing and assessing any new NNSA safeguards and security facilities or any modifications to any NNSA facilities that have an impact on safeguards and security.
- Protecting information systems and networks, based on the NNSA enterprise architecture.

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**a. Accomplishments**

**Launched an Integrated Safeguards and Security Management (ISSM) program.** In spring 2001, we issued a letter on ISSM to all NNSA federal and contractor employees; introduced the program at the sites through all-hands meetings, videos, and management reviews; and developed an internal website dedicated to ISSM.

**Established clear lines of authority and communications between NNSA and DOE.** On January 19, 2001, the Administrator issued a Procedural Implementation of DOE Order 470.1 that clearly identifies the lines of authority and communications for safeguards and security.

**Reviewed security policies.** The NNSA led an Implementation Review Conference to assess all existing safeguards and security policies within the Department of Energy and, in particular, those that were issued over the past two years. This assessment resulted in proposals for changes in policy, as well as the need for clear implementation guidance in specific areas.

**Completed the efforts to identify the weapons design information requiring the highest protection and to identify security measures agreeable to both the Department of Energy and Department of Defense.** In the past, the Department of Energy conducted a review of the classification of all weapons information. The NNSA led an effort to identify the weapons information requiring the highest level of protection, to set the appropriate protection level, and to obtain agreement with the Department of Defense.

**Developed new cyber security initiative.** The NNSA has begun efforts to develop an NNSA-wide approach to cyber security. This approach, which involves an initiative to develop a secure NNSA enterprise-wide network and provide graded world-class protection to our most important information, was delivered to Congress in February 2000. In accordance with the plan, NNSA has accomplished the following:

- Provided support to address critical cyber security needs at the nuclear weapons laboratories.
- Defined funding requirements for the initiative, and developed a complete NNSA enterprise-wide inventory of electronic information assets.
- Designed an enterprise capability to manage access to the nuclear weapons data on a need-to-know basis.
- Developed a cyber threat assessment that will guide the development of NNSA current and future cyber security policies and practices.

**b. Plans for FY 2002 and beyond**

**Evaluate the appropriate level of safeguards and security effort for the NNSA complex.** The changing world environment will require the NNSA to identify the level of effort needed today and into the future.

**Assure implementation of Integrated Safeguards and Security Management.** Managers responsible for protecting classified information or assets at all levels of both federal and contractor organizations will implement the ISSM program.

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**Focus on cyber security.** In coordination with NNSA’s Chief Information Officer, NSSP will implement the Integrated Cyber Security Initiative plan, including the following actions:

- Complete the secure enterprise architecture design.
- Develop a migration plan to begin implementation of the secure enterprise network.
- Define NNSA enterprise-wide services to support the secure sharing of nuclear weapons data across the enterprise.

**Create a professional development program for safeguards and security.** We will develop a safeguards and security program for NNSA federal security professionals.

**Focus on field involvement in future security actions.** We will continue to involve the field in developing new policy and implementation initiatives.

### **c. Challenges**

**Obtain the necessary resources.** To meet our current and emerging safeguards and security needs, we must obtain the necessary funding.

**Ensure that all personnel are made part of the security solution.** NNSA must continue efforts to ensure that personnel understand the reasons for security and have the opportunity to identify potential improvements through ISSM.

**Develop a risk management approach to security.** The challenge is to develop an approach to security that is based on risk management.

**Integrate science and security.** The challenge is to ensure that security is applied in a manner to protect information and materials while allowing research to be accomplished.

## **2. Counterintelligence Program**

The Office of Defense Nuclear Counterintelligence (ODNCI)—an NNSA component attached directly to the Office of the Administrator—ensures that policies and procedures are in place to counter the efforts of foreign intelligence services and other foreign entities who may target NNSA personnel, information, or resources. This office also oversees the activities of CI offices located where mission work is performed that implement these policies and procedures. ODNCI objectives include:

- Developing an easily understood CI policy that helps all personnel understand the CI threat and their role in protecting against the threat.
- Ensuring that suspected CI incidents are thoroughly examined and resolved, making referrals to the FBI, as appropriate.
- Identifying and thwarting cyber intrusion activity.
- Ensuring that all aspects of the NNSA mission can be accomplished in a manner that protects people, information, and resources from exploitation by foreign intelligence services.

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### a. Accomplishments

The past year has seen significant progress in the continuing enhancement of CI capability within the NNSA. Under the provisions of a Secretarial Policy Memorandum, NNSA has worked closely with its DOE CI counterparts to ensure effective CI Awareness among employees across the complex. NNSA has also made significant progress in our CI-cyber capabilities and have laid the groundwork for significant enhancements to our business practices, using web-based enterprise systems for information collection and management. Other CI accomplishments:

- **Established clear lines of authority and communication between NNSA and DOE.** On January 19, 2001, the Secretary issued a Secretarial Policy Memorandum that clearly identified the relationship between the DOE Office of Counterintelligence (OCI) and the NNSA ODNCI. The memorandum ensures that the Administrator will have an internal CI function responsive to his requirements: directly controlling NNSA CI field offices and leveraging the established program capabilities of OCI through a dual-managed joint staff at the headquarters level.
- **Reviewed security/counterintelligence policies.** In concert, NNSA and DOE security and CI offices participated in a comprehensive review of existing policies and guidelines. This has resulted in the identification of improvements to the content of the DOE CI Order and enhancements to policies governing travel and hosting of foreign visitors and assignees.
- **Improved CI cyber capabilities.** NNSA CI Worked closely with and DOE CI and security counterparts to establish intrusion-monitoring capability at 11 field sites. We developed the capability to analyze data for CI significance and coordinate with other CI community members. We are working to establish improved IT infrastructure to support our CI business activities and a dedicated secure network will allow increased ease and efficiency in handling classified data and managing investigative activity. The software design phase is complete, and we anticipate completion of hardware acquisition and system refinement by summer 2002. A web-based enterprise system will allow multidimensional analysis of data for development of business metrics.
- **Strategic planning.** ODNCI has made progress in the strategic planning process, which should be completed in spring 2002. This will be the foundation document for the development of metrics that will allow enhanced management of our resources and mission accomplishment.

### b. Plans for FY 2002 and beyond

As is true for the security initiatives described above, ONDCI will initiate or continue efforts in CI cyber, strategic planning and metrics, policy development and implementation, and other areas:

- **CI Cyber.** Installation of network hardware will allow high-speed, broadband-encrypted communication for efficient entry of data into our centralized counterintelligence database. Database and software capabilities will be enhanced to

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allow for CI investigative case management and tracking of high-risk personnel assessments.

- **CI Strategic Planning/Metrics.** A “strawman” strategic plan has been developed, with input from four functional-area working groups. Each group has had headquarters and field representation. This strawman plan will be further developed in spring 2002 and culminate in the publication of the strategic plan. Metrics development will follow. We anticipate “benchmarking” other CI organizations in the development of our metrics and business information management procedures.
- **CI Policy Development and Implementation.** ODNCI is participating with its DOE CI counterpart to ensure that the draft DOE CI Order is updated to reflect current CI structure within the Department (i.e., existence of ODNCI and OCI, with dual-managed joint staff). Likewise, ODNCI will ensure that NNSA equities are considered with respect to other DOE policies governing such things as unclassified foreign visits and assignments and official foreign travel.
- **CI Awareness.** ODNCI is working with the OCI Training and Awareness program to ensure that CI Awareness initiatives are focused on NNSA needs. The program will use a multifaceted approach, with guest speakers, training courses, and computer-based briefings, to ensure that the NNSA population is aware of the threat posed by foreign intelligence services. Personnel must be alert to the possibility, able to identify indicators, and knowledgeable of what to do should they suspect intelligence activity. We also intend to work closely with Defense Nuclear Security to ensure use of joint training/awareness opportunities, maximizing the utility of training time for NNSA personnel.

### c. Challenges

The primary ongoing challenge is CI Awareness. While ODNCI has had significant success in developing and presenting awareness materials and briefings, this will continue to be an area with significant challenges. This is particularly true with respect to the CI scope polygraph, used as one component in the screening of personnel for “high risk” positions. We anticipate that the final report of the National Academy of Science study of the polygraph will be released in FY 2002, and we expect that its findings will be important to consider with respect to any changes made to the Department’s polygraph program. As with other aspects of the CI mission, we must ensure that we are able to articulate the CI threat in a way that engenders understanding of, and support for, the CI measures that we ask people to take, including a CI scope polygraph examination (where indicated).

We will also continue to be focused on ensuring that we have the resources needed to accomplish our mission. We have a need for additional personnel at several of our field locations. We will continue to leverage technology to improve efficiency and ensure timely communication and analysis of information. We will spend increased effort in the counterterrorism area of our mission, ensuring that threat information is passed to security as necessary to protect NNSA resources.



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## **D. Integrate Health, Safety, and the Environment with Production and Science**

NNSA is committed to protecting the safety of our workers, the public, and the environment. Health, safety, and environmental priorities are integrated as NNSA develops work plans to enable NNSA to perform its mission safely. To achieve these goals, NNSA has implemented an Integrated Safety Management System (ISMS). Through ISMS, we define the work and understand the hazards, select appropriate standards, and perform the work safely.

The principles underlying ISMS include the following:

- Line management is responsible for safety.
- Roles are clear; the staff is competent.
- Priorities are balanced.
- Operations are appropriately authorized.
- Involve employees in defining work and assessing hazards.

NNSA has established an Office of Environment, Safety, and Health Operations Support (ESHOS) in the Facilities and Operations component. ESHOS supports the federal field elements in performing all environment-, safety-, and health-related assurance functions.

NNSA field organizations assess contractor safety on a regular basis. NNSA headquarters provides guidance, oversight, and integration to ensure that safety systems are consistent across the complex.

### **1. Accomplishments**

**Consolidated independent oversight.** NNSA has clarified and simplified the respective assessment roles of DOE and NNSA. Except in “for cause” instances, DOE will limit assessment responsibilities to its Independent Assessment organization exclusively. NNSA headquarters evaluates the oversight programs carried out by field organizations; field organizations review contractor self-assessments and perform oversight; and contractors conduct self-assessments and corporate independent assessments.

**Provided technical expertise to line managers at headquarters and the field.** ESHOS provided headquarters and field line managers with technically competent staff to assist with integrating safety with mission.

**Conducted a comprehensive review of contractor quality assurance.** In response to concerns voiced by the DNFSB and consistent with the Administrator’s vision, NNSA experts conducted a comprehensive review of our contractors’ quality assurance programs.

**Improved awareness of the environment.** ESHOS achieved the following:

- Received the National Government Association first place award for the NNSA environmental multimedia training program, “No Higher Priority.”
- Implemented the first pollution-free cafeteria at Y-12 (this activity is nominated for the White House “Closing the Circle” award).

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- Reported cost savings/cost avoidance totaling \$524,000 in FY 2001.

**Streamlined processes.** ESHOS has reviewed the issues and challenges facing the NNSA over the past year. Based on this review, we have taken action to find better, cheaper, and more efficient ways of accomplishing the mission without sacrificing the environment and safety. For example, we revised guidance in order to integrate safety and quality assurance; also, the NNSA Administrator obtained National Environmental Policy Act (NEPA) authority from the Secretary and initiated consolidated NNSA independent oversight in one office.

## 2. Plans for FY 2002 and beyond

- **Develop a prioritized staffing plan, and hire highly qualified technical staff.** Field elements have developed a prioritized staffing plan, emphasizing hiring and qualifying facility representatives. NNSA will recruit and hire highly qualified technical staff required to fill previously identified skills gaps—specifically, criticality safety.
- **Ensure that contractors develop and implement robust self-improvement processes.** ESHOS will work with the field to ensure that contractors develop and implement robust self-improvement processes.
- **Conduct on-site reviews of field element performance.** ESHOS will implement an assessment protocol that focuses on federal field element performance.
- **Continue to provide technical expertise to line managers at headquarters and field elements.** This support includes assisting with operational readiness reviews and other areas to assist with integrating safety with mission activities.
- **Track NNSA environment, safety, and health performance.** ESHOS will develop safety metrics and trend performance, building on previous indicators to assure that an informed management can make the correct decisions and initiate appropriate research in support of improved safety.

## 3. Challenges

**Get the right expertise on the right job at the right place.** The top challenge for ESHOS is to maintain its core competencies; hire new professional environment, safety, and health expertise; and maintain its onboard best and brightest.

**Establish clear expectations.** Clear expectations, simplified requirements, and streamlined assessments will provide a framework for NNSA to perform the mission safely and efficiently.

## E. Ensure That the Laboratories, Plants, and Test Site Are Capable of Delivering—and Motivated to Deliver—the Best Achievable Performance in Support of the NNSA Mission

Achieving the three objectives described in Part 1, Chapter II of this report requires the NNSA headquarters and field elements to work together as a single team to ensure that the

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contractors are properly motivated, overseen, and evaluated. NNSA reorganized and consolidated the business and enterprise functions (as described in the *May Report*) to accomplish these objectives. The consolidated functions are field office resource management, enterprise management, contractor performance evaluation, and organizational support. This consolidation allows NNSA to focus on streamlining policies and processes that unnecessarily burden its contractor organizations.

The Office of Field Operations Support (FOS) within F&O assists field elements and contractors in achieving NNSA's mission in the following ways:

- Assisting contractors in maintaining the critical skills necessary to meet long-term requirements.
- Working with federal field elements to evaluate contractors, based on agreed-upon performance measures linked to the NNSA mission requirements.
- Providing resources to field elements, using a corporate process based on mission and support requirements.
- Streamlining the processes for field involvement in policy reviews, business and technical reporting, and managing external and internal assessments.

**Support contractors in maintaining the critical skills necessary to meet long-term requirements.** In November 2000, the Departments of Defense and Energy submitted a joint report to Congress in response to the Chiles Commission recommendations and congressional mandate. This report concluded that while many critical skills are at risk in the nuclear weapons complex, the situation is manageable with the proper level of attention and resources. We have established a team to identify the critical skills needs, monitor progress, and recommend improvements to provide flexibility and to remove administrative barriers.

**Motivate the best achievable performance by our laboratories, plants, and test site while ensuring that they receive fair and comparable treatment.** We use performance-based management contracts to ensure that our contractors are focused on key program objectives and performance expectations and that they are held accountable for results. The contractors support internal DOE and NNSA customers, government agencies, and the private sector. Our approach is to develop and implement an integrated corporate process for planning, monitoring, and assessing contractor performance, resulting in a documented, supported evaluation and fee determination.

**Provide resources to field elements, based on mission and support requirements.** We are developing a corporate process to identify, prioritize, and provide resources for federal activities in the field. This process, which involves headquarters and the federal field elements of NNSA, will ensure that resource requirements are developed based on integrated plans linked to mission requirements. We will hold the federal staff accountable—just as we hold our contractors accountable—for managing their resources to meet mission requirements.

**Streamline business and technical reporting requirements, and develop processes for field involvement in policy reviews and resolution of operational issues.** Currently each program and field office has a different level of involvement in policy development, different

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reporting requirements, and different processes for resolving operational issues that require headquarters involvement. Numerous assessments and reviews are also conducted on field office and contractor activities; however, they are uncoordinated and impact their ability to meet mission requirements. Current processes are being reviewed to identify best practices, and then NNSA will reengineer the processes to improve efficiency and effectiveness.

## **1. Accomplishments**

**Developed workforce performance metrics.** In October 2000, NNSA headquarters, field, and contractor representatives agreed on a consistent definition of critical skill positions and identified performance metrics. The key metrics are increased hiring and decreased vacancy rates for critical skills. We subsequently prepared the first semiannual performance metrics report.

**Updated DOE policy and contract provisions.** NNSA participated with the rest of DOE in preparing a revision to DOE Order 350.1 to ensure that contractor human resources policy promotes recruitment and retention of contractor-critical skills. NNSA has added a clause to new and revised laboratory and plant contracts that ensures contractor latitude and flexibility to achieve critical skills objectives.

**Launched contractor performance evaluation process improvement effort.** NNSA standardized the evaluation areas and scoring regimens for the laboratories, plants, and test site contracts to better focus on specific programmatic objectives. NNSA established a team, involving programs and field elements, that developed and implemented a corporate contractor performance evaluation process. This new process includes clearly defined roles, responsibilities, tasks, and schedules, leading to senior NNSA management review of the results and oversight of the process.

## **2. Plans for FY 2002 and beyond**

**Implement a streamlined, disciplined process for contractor performance evaluation.** NNSA will be able to comprehensively assess our contractors' performance each year through use of a streamlined, disciplined process for contractor performance evaluation that is developed and maintained by a team representing all NNSA participants. This will help ensure that we provide appropriate reward or penalty in terms of fee paid or documented performance results that can directly impact a contractor's potential for contract extension or competitive award.

**Implement an integrated resource allocation system for field offices.** The NNSA field offices must have the right resources in the right place to ensure that mission requirements are met. To accomplish this, a team representing the field and headquarters will develop and implement an integrated system that reviews resource needs across the NNSA field complex and allocates the resources based on integrated mission needs.

**Enhancing and streamlining business practices that require headquarters and field office interface.** We will review current practices to develop joint headquarters-field teams to identify and implement improvements so that the goal of reducing administrative burdens by streamlining practices is achieved. The practices to be reviewed include policy directives

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development, coordination of field assessments, reviews and periodic reports, and coordination of one-of-a-kind issues that require headquarters involvement.

### **3. Challenges**

**Offer challenging and rewarding career opportunities.** To attract and retain the skilled workforce needed to maintain the stockpile indefinitely, NNSA must offer challenging and rewarding career opportunities in state-of-the-art facilities. This is challenging when faced with old and deteriorating infrastructure and constrained budgets. Our science and technology initiatives are intended in part to provide that challenging, attractive working environment for the best and brightest, who are key to a successful program.

**Ensure effective mission support.** NNSA must also ensure proper management focus on the administrative and operational aspects of our mission. This lack of focus negatively affects employee morale and retention and results in inefficiencies and redundant efforts.

**Be a fair—but demanding—customer to our contractors.** NNSA must administer the contractor performance evaluation process fairly and efficiently while ensuring appropriate operational awareness and involvement by key NNSA managers. The process has many steps involving multiple NNSA offices and has periods of significant peak activity that will be a challenge to coordinate. The process must allow for ongoing, but not intrusive, monitoring of results.

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## Chapter V

### Management and Administration Work Plan – Creating a Well-Managed, Responsive, and Accountable Organization

The NNSA is committed to creating a well-managed, responsive, and accountable organization. A key challenge in standing up this new organization is to provide employees at all levels with the administrative and decision-support tools, the materials and processes, and the structures and systems that will help them operate *efficiently* and *effectively*. To this end, the NNSA has created a new organization, the Management and Administration (M&A) support component, to champion efforts to deploy improved business practices and to create the necessary systems and processes that will allow NNSA to operate as an integrated nuclear security enterprise.

NNSA has begun to adopt and implement new or redesigned systems and processes. These include a disciplined program planning and budgeting process that allows its decision makers to make choices about the best use of resources so that its programs are cost-effective and achieve enterprise-wide integration. Another important objective is to reinvigorate and rightsize the federal staff. Addressing the organizational culture; realizing the benefits of diverse contributions; and NNSA's commitment to the core values of excellence, integrity, respect, and teamwork are also high priorities.

Finally, NNSA will adopt streamlined contract and acquisition practices and information management practices so that all of the NNSA jobs can be done more efficiently.

#### A. Deploy an Integrated Planning, Programming, Budgeting, and Evaluation System

NNSA decision makers must have the tools for choosing the best mix of resources to meet national security objectives within fiscal constraints. Decisions about resources must be made in an integrated manner, taking into account the needs of the entire complex. To support timely, accountable, and integrated program and resource decisions, NNSA is deploying an integrated Planning, Programming, Budgeting, and Evaluation (PPBE) process. The NNSA Office of Planning, Programming, Budgeting, and Evaluation is responsible for creating policies and establishing processes and practices that will assist the organization to achieve this goal.

Development of the PPBE process has been under way for the past year (as was summarized in the *May Report*). This decision-making tool links long-range planning (*what* NNSA needs to do) with programming (*how* NNSA will accomplish it), with budgeting (obtaining *resources* and applying fiscal *constraints*), and with evaluation (*verifying* that the mission has been accomplished).

This new process encompasses aspects of the Department of Defense (DoD) Planning, Programming, and Budgeting system and is structured to redress the inconsistency and lack of discipline in current processes. The PPBE process also facilitates corporate management decision making.

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NNSA began using this new, complex-wide process in September 2001, beginning with FY 2003 budget activities. Progress has been slowed by delays in key NNSA documents and in receiving the final FY 2002 appropriation; however, NNSA hopes to regain schedule in February and March.

Although the annual budget cycle remains essentially unchanged, NNSA will now follow a single, formal, unified process that involves each headquarters, field, and contractor component of the NNSA organization, in accordance with established roles and responsibilities. The PPBE process sets firm requirements and schedules, but allows component organizations flexibility in choosing the means to meet them. To maximize efficiency, the process uses established, successful mechanisms, relationships, and documents wherever possible to meet new requirements. The PPBE process does not seek to standardize internal aspects, unless necessary to address performance or other problems.

To capture lessons learned and to plan for further improvement, NNSA will conduct a major evaluation of the first PPBE cycle after the FY 2004 budget is provided to OMB next fall.

## **1. Accomplishments**

The NNSA has realized the following significant accomplishments since the *May Report* to Congress:

**Directly linked contractor performance incentives to program priorities and strategic objectives for the first time in FY 2001.** The NNSA Management Council approved a new Contractor Performance Evaluation Process in 2001 that requires direct involvement of HQ program offices in establishing performance objectives at the beginning of the process and in formally concurring with the performance evaluation plans before they are negotiated with the contractors. The new process also required the NNSA Site Office managers to brief the results of their contractor evaluations to the Management Council after the end of the fiscal year; they did so on December 5, 2001. This forum allowed the Management Council and key HQ and field participants in the process to take a corporate look at contractor performance across the weapons complex and to ensure consistency, accuracy, and fairness in the evaluation results. The Administrator and Deputy Administrator approved the final evaluation reports and fee awards. This heightened senior management involvement will promote continuous improvement in this vital process and help ensure appropriate contractor accountability for execution of the NNSA program.

**Developed an overarching structure for the PPBE process.** The full process will be implemented for the FY 2004 cycle, which commenced in October 2001. Midcycle transitions are under way for the FY 2002 and FY 2003 budgets. With its submission to OMB in September, the FY 2003 budget was transitioned to the PPBE process. NNSA produced a corporate budget submission as required by the Congress, although the four budget sections—Weapons Activities, Defense Nuclear Nonproliferation, Naval Reactors, and the Office of the Administrator—remained separate decision units with separate funding control levels.



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**Established two teams to review and provide recommendations on the Programming and Evaluation phases.** One team will develop recommendations on the details for the Programming phase. The process has the following objectives:

- Focus on reaching corporate decisions on key resource issues in the Management Council (for this, reporting structure and format are key issues).
- Provide enough rigor to replace DOE's current corporate review budget.
- Provide an opportunity for each Deputy and Associate Administrator to present a complete program of activities, meeting the requirements laid out in the five-year program and fiscal guidance.
- Provide for complex-wide input from field elements.
- Support an NNSA corporate database for five-year budgeting information.
- Provide a forum for other entities to participate, possibly including the DOE Chief Financial Officer and the Department of Defense.

Beginning in February 2002, this team will provide recommendations for the Management Council.

A second team will develop recommendations for the Evaluation phase. Because the focus of the evaluation work is in the field where the work is done, this team will comprise field and M&O employees, in addition to program managers. NNSA is gathering process requirements for the Evaluation phase, including internal NNSA requirements, as well as requirements for the DOE Deputy Secretary's initiatives in performance management. Based upon these requirements and the team's recommendations, NNSA will develop a rigorous evaluation system that will link the program plans and budgets through a cascade of performance measures. This comprehensive system will assure that management at all levels has timely information needed for decision making.

## **2. Plans for FY 2002 and beyond**

**Establish formal performance cascade.** Concurrent with the FY 2004 budget cycle, the beginning of FY 2002 will see the formalization of the first complete cascade of performance measures for NNSA. The strategic plan forms the top line of this cascade, with its five strategic goals. A new requirement, called program integrated plans, will link to these goals and provide the next level of performance measurement. These plans represent commitments between the Deputy and Associate Administrators and the Administrator. These in turn link to the annual operating plans and multiyear program plans, which contain milestones for the budget year, as well as for the five-year period.

**Automate budget execution.** NNSA will roll out an automated budget execution system supporting PPBE in a series of phases, beginning in FY 2002. The first key component of the system is the Work Authorization System (WAS).

**Perform semiannual updates of program planning.** Formalizing a semiannual update cycle for program planning documents will ensure that planning is realistic and timely.

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The September update will focus on budget execution. The March update will focus on budget formulation and tie to the current appropriation and the President's request to Congress, including the official five-year estimates. These data are also used as the baseline for the Programming phase of the PPBE process.

An NNSA budget database will also be updated semiannually to reflect these estimates, and these data will constitute NNSA's official budget-quality information to meet congressional requirements for five-year budget estimates.

### **3. Challenges**

NNSA will face several challenges as it seeks to integrate planning, programming, budgeting, and evaluation. NNSA must overcome a culture that has recently employed ad hoc planning, programming, budgeting, and evaluation processes in which budget "drills" often substituted for planning. Clearly defined roles and responsibilities within the new process must be understood and respected by all NNSA personnel.

#### **B. Reinvigorate and Rightsize Federal Staff**

The foundation of a well-managed, responsive, and accountable organization is a workforce of dedicated, skilled, and properly deployed people. For this reason, NNSA is committed to recruiting, retaining, and developing a world-class federal workforce. The NNSA Office of Human Resources (HR) is responsible for creating policies and establishing practices that will help the organization achieve this goal.

NNSA recognizes the challenges that it faces: NNSA competes with other government agencies and with organizations in the private sector for scarce talent. In addition, NNSA faces the potential retirement of many of its most experienced and knowledgeable managers and staff members within the next five years. Specifically, 60 percent of the NNSA's senior executives will be eligible to retire by FY 2006. NNSA believes that the best way to address this challenge is to employ innovative HR management practices that will help it retain those professionals whose talents are essential to the mission, attract individuals whose talents are needed to face new mission-related challenges ahead, and make clear to some of our present employees that they must either retrain for the future job challenges or move on to other opportunities.

The priorities of the NNSA Office of Human Resources are divided into near- and long-term objectives. Recent HR objectives have been to (1) execute the necessary HR actions to support the NNSA restructuring effort, (2) establish the NNSA Executive Resources Board, (3) develop the NNSA excepted service policy and implementation guidelines, and (4) streamline and document basic HR operating processes.

In support of plans to reinvigorate and rightsize federal staff, HR's longer-term objectives are to (1) determine the size, composition, and location of the NNSA workforce needed now and in the future, based on (a) NNSA's five-year and fifteen-year program plans and (b) core functions and key roles identified in the process reengineering; (2) create an integrated workforce development plan designed to close skills gaps, redesign federal career paths, and

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enhance performance; (3) prepare to facilitate smooth rightsizing; and (4) complete work on streamlining processes and design of work units within the Office of HR.

## **1. Accomplishments**

**Established the headquarters structure, and reassigned staff to new components.** In early July, the Principal Deputy Administrator directed HR to prepare the documentation to stand up the headquarters organizational structure and facilitate the reassignment or realignment of NNSA staff members to form the backbone of the new Facilities and Operations (F&O) and Management and Administration (M&A) components.

On August 2, the Administrator issued a memorandum that formally approved the high-level structural changes and identified the people to lead the major organizational unit of the NNSA.

Initial transfers from DP and NN to the F&O and M&A components ensured that the new components had the staff needed to complete the design of new processes and work unit structures. A total of 181 staff members have been transferred, including DOE staff members who were needed to establish legislatively required units within NNSA. More staff may transfer within NNSA over the next year, as changes in roles and responsibilities are documented and implemented.

**Established the NNSA Executive Resources Board.** Effective May 30, 2001, the Secretary of Energy delegated to the NNSA Administrator the authority to establish an NNSA Executive Resources Board (ERB), appoint Board members, and approve executive personnel actions for positions/appointees assigned to the Senior Executive Service (SES), Scientific and Professional (ST), and Senior-Level (SL) pay systems. This authority allows NNSA to manage staff as a semiautonomous entity within DOE. The Administrator approved the NNSA ERB Charter and formally established the Board on July 19, 2001. The Board met for the first time on August 22, 2001, for orientation and began deciding cases for NNSA senior executives and senior excepted service appointments.

**NNSA has established an interim excepted service policy.** The NNSA Act provides the Administrator with the authority to establish up to 300 scientific, engineering, and technical positions within the NNSA that are exempted from the provisions of Title 5, United States Code. The hiring and pay flexibility associated with this excepted service authority provides NNSA some new options when recruiting and placing people into key scientific, engineering, and technical positions. NNSA currently uses its excepted service authority to fill difficult-to-recruit or key positions and to retain strategic employees with critical technical skills, focusing on the need to fill technical positions and retain key employees in NNSA site offices.

In June, a team of headquarters and field staff completed work on NNSA's interim excepted service policy and implementation guidelines. On July 19, 2001, the Administrator approved the NNSA "Interim Excepted Service Employment Authority Implementation Policy" to use until a more comprehensive excepted service personnel system could be developed and implemented. The interim policy and instructions contain guidelines to headquarters and field offices for hiring employees to fill key or difficult-to-recruit positions; establish

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appointment, compensation, and performance management processes; and give delegations of authority to managers and servicing personnel offices. To date, NNSA has appointed 19 employees under its excepted service authority.

**Analyzed and documented HR operating processes.** The Office of Human Resources completed an analysis of its core processes in August. HR staff are standardizing and streamlining those processes, clarifying roles, and educating both HR staff members and component managers about their changed responsibilities relative to HR functions.

## **2. Plans for FY 2002 and beyond**

**Determine the size and composition of the NNSA workforce needed now and in the future.** HR will conduct a workforce analysis in order to make decisions about reshaping and rightsizing the workforce. HR will analyze the staffing plans resulting from the reengineering effort (described in Part 1, Chapter II) to determine the appropriate staffing levels and mix of skills needed by NNSA now and in the future. These data become the foundation for all HR initiatives to develop, shape, and size the workforce.

**Create an NNSA workforce development plan, and deliver targeted training programs.** Starting with the workforce analysis, HR and NNSA managers will identify the core competencies needed in the NNSA executive and management ranks and in specific job families. To do this, HR will use internal data collection, outside research, and benchmarking against other scientific and technical organizations to identify the managerial and technical competencies that must be improved at NNSA. These competencies will be the focus of NNSA's workforce development plan. In addition, the changes in management roles described in Part 1, Chapter II will mean that in many cases, different skills will be required of managers and employees in the future.

NNSA's approach is simple: Provide logical career paths and appropriate learning opportunities for NNSA employees at every level. The workforce development plan will include a core curriculum designed to meet NNSA employee training needs, as well as career paths with rotational and temporary assignments to round out the learning experience. The means of training delivery will be innovative. For example, NNSA will use planned job rotation to provide the range of developmental experiences needed by its senior managers, and it will take advantage of best practices in technology-enabled learning to bring the benefits of learning to NNSA employees, regardless of their location. Most important, training and career-enhancing assignments will be prerequisites for advancement within the NNSA. NNSA will also evaluate the benefits and costs of creating a formal "Center of Excellence" for training at one of its Operations Offices.

**Prepare to facilitate smooth rightsizing.** Because NNSA anticipates that streamlined processes and redefined roles will result in a significant reduction in the need for federal employees, HR will be prepared to advise and support NNSA managers as they make decisions about rightsizing. Approaches will range from reassignments to buyouts and transfers of function. HR's utmost priority is to balance the needs of the organization with a respectful and flexible approach to helping impacted employees through what may be a stressful time.

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**Complete redesign of HR processes and work units.** By the end of the second quarter of FY 2002, the new roles, processes, and work units within the Office of HR will be defined, and all NNSA components (HR customers) will be briefed on how the HR Office will work with them.

### **C. Acquisition Strategy to Improve Accountability**

NNSA must maximize enterprise-wide procurement opportunities and integrate procurement considerations directly with program and project management organizations. To do this, NNSA will develop and implement a simpler, less adversarial contracting approach that capitalizes on the private-sector expertise and experience of its management and operating contractors while simultaneously increasing their accountability for performance on NNSA programs.

The NNSA Office of Procurement and Assistance Management (PAM) is responsible for creating policies and establishing practices that will enable the organization to achieve its goals. In order to achieve more responsive and accountable procurement processes, NNSA will continue to streamline these processes through aggressive benchmarking, business process reengineering, and sharing of best practices. In partnership with NNSA federal and contractor purchasing managers, PAM will (1) maximize enterprise-wide procurement opportunities, (2) ensure the integrity of the acquisition process, (3) enhance performance-based contracting and rely on commercial standards for judging contractor support functions, (4) streamline procurement processes, and (5) improve NNSA supply chain and logistics management. NNSA will also create an acquisition corps to develop staff with an enterprise-wide perspective of acquisition management.

#### **1. Accomplishments**

To date, NNSA has completed the following:

- Negotiated two national laboratory contracts, worth more than \$13 billion, that include stringent performance criteria and standards language, supported by comprehensive and integrated contract management plans.
- Initiated studies (1) on current practices and systems to baseline for efficiencies and improvement, including the planning, coordinating, and managing of support service requirements at NNSA headquarters and (2) on the appropriate roles, responsibilities, and lines of authorities between NNSA headquarters and field activities.
- Initiated the NNSA Contracting Forum, comprising the senior federal procurement and contractor purchasing managers and PAM staff, to increase communications and provide a collaborative mechanism to address enterprise-wide issues.

#### **2. Plans for FY 2002 and beyond**

To ensure the most efficient and effective application of resources, PAM will design and implement acquisition management methods and systems to accomplish the following:

- Develop a new governance strategy for the NNSA national security laboratories that will be piloted at Sandia National Laboratories. A new governance model will be

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designed to capitalize on the private-sector expertise and experience of NNSA's management and operating contractors, while simultaneously increasing their accountability for high performance and responsiveness to NNSA program and stewardship requirements.

- **Maximize enterprise-wide procurement opportunities.** We plan to take greater advantage of the significant buying power represented by NNSA's several major federal procurement offices and the purchasing activities of its nine major production and laboratory contractors.
- **Ensure the integrity of the acquisition process.** In conjunction with the planned redesigning of the NNSA acquisition systems and processes, PAM will participate in a program of performance-based reviews of federal field and headquarters internal control and purchasing systems to establish an initial baseline. This will ensure that the NNSA acquisition systems and processes comply with statutory, regulatory, and good business system expectations.
- **Transition from contract management to acquisition management.** PAM will assess the current state of the NNSA procurement workforce and initiate training in areas of contracting, supply chain management, integrated process teams, and project management.
- **Drive down decision making after rebaselining.** NNSA will identify opportunities where authority/decision making can take place at lower levels in NNSA sites and organizations. To identify these opportunities, NNSA has chartered a Contracting Forum, comprising the senior federal procurement and contractor purchasing managers and PAM staff.
- **Streamline procurement processes.** PAM will contract for an independent review of the efficiency and effectiveness of the current NNSA acquisition organization, systems, and processes.

### **3. Challenges**

NNSA will have to realize its vision of a future acquisition workforce that will be smaller, highly motivated, adaptable, knowledgeable of commercial business practices and information technology, and able to operate in a rapidly changing environment.

As NNSA supports its program mission requirements, focused education and skills training for acquisition professionals will be needed to provide the necessary competencies in advanced business strategy and business planning skills, market understanding, and the business requirements of program and project management.

### **D. Establish Diversity Programs**

Diversity has historically played a significant role in the federal field elements and the national laboratories over the past eight years. Organizational structures, strategic plans, national conferences, and award programs have been common constructs of these entities under the Department of Energy and have resulted in numerous best practices. In an effort to build on this momentum and in response to a range of high-profile diversity issues, the

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NNSA has created an Office of Diversity. In particular, the Diversity Office has the important role of providing leadership, fostering partnership, and modeling accountability throughout the NNSA in advancing the diversity mission. Recognizing the importance of respect, inclusion, bridge building, teamwork, understanding differences, minimizing tensions, and managing conflict as key elements of diversity, NNSA is committed to providing leadership in diversity and addressing work environment issues at headquarters and in the field.

## 1. Accomplishments

- **Racial profiling report and recommendations** (August 2001). The Administrator presented a report to DOE Secretary Abraham, providing an analysis of—and recommending key actions necessary for addressing—high-profile racial profiling issues.
- **Tri-lab diversity meeting** (August 2001). This meeting was the first of its kind for NNSA to explore retention, recruitment, and security policies in light of racial profiling and career advancement concerns.
- **Diversity self-assessment and training** (February–October 2001). Approximately 300 people within the Office of Defense Nuclear Nonproliferation completed the program-wide training. The NN Diversity Council, in existence since 1999, is now working to address other people and environmental issues stemming from the year 2000 self-assessment.
- **Preliminary steps to set up a Diversity Office.** A Diversity Manager was detailed from Sandia National Laboratories in December, and two staff members have been reassigned to the Diversity Office. A preliminary plan for moving forward is in place.

## 2. Plans for 2002 and beyond

- Establish an NNSA Diversity Council, and produce a diversity strategic plan.
- Define and clarify interfaces with DOE headquarters; NNSA headquarters; and NNSA field elements, laboratories, and production plants.
- Effectively address diversity issues in a timely manner.
- Begin to make strides in improving the work environment for the people of NNSA.
- Work toward ensuring a balanced workforce.
- Seize opportunities to promote the importance of diversity throughout NNSA.
- Provide developmental opportunities for management in diversity leadership and in managing diversity.

## 3. Challenges

- Facilitating a rapid deployment of the program.
- Working out the partnerships and interfaces with associated organizations and operations.

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- Recruiting and hiring a high-level manager for the Office of Diversity and Outreach.
  - Securing the commitment and involvement of management, given other priorities.

## **E. Develop a Streamlined, Efficient, and Cost-Effective Information Management Environment**

NNSA is committed to developing an information management environment that supports streamlined, cost-effective decision making and operations. The NNSA Office of Chief Information Officer (OCIO) is responsible for creating policies and establishing practices that will support the organization to achieve its goals.

As such, NNSA will develop and implement an integrated information management architecture. This project will provide a secure and reliable information environment that is coordinated and seamless for all portions of the NNSA enterprise.

NNSA faces several challenges to establishing an effective and comprehensive information management planning process. NNSA must develop appropriate means for ensuring that coordinated plans are implemented in the field. Further, in order to streamline and speed management decisions in the face of these challenges, NNSA must (1) fully integrate information management planning into its programmatic planning processes, (2) achieve an information management architecture that is secure and reliable and provides integrated interoperability across the NNSA enterprise, and (3) influence information management policy and planning efforts external to NNSA. Much of this effort is central to the PPBE effort described earlier in this chapter.

An explicit office charged with responsibility for developing policies and procedures for the management of information is new with the implementation of the NNSA.

### **1. Accomplishments**

Since the *May Report* to Congress, we have accomplished the following:

**Established the Office of the Chief Information Officer (OCIO).** Current staffing plans are for a small permanent staff, leveraging subject matter experts (as needed) from the NNSA and Department federal and contractor information management organizations. Consistent with this plan, a number of working groups that include representation from throughout the NNSA enterprise (headquarters and field) and DOE have been established or reinvigorated. These groups include an NNSA senior management group looking at strategic information management issues, a staff group focused on technology development and implementation issues, and an intra-Department group headed by the CIOs from the Office of Science, Office of Environmental Management, and NNSA. The NNSA CIO also participates in the DOE CIO Executive Council, as well as the federal Chief Information Officer Council.

**Linked information management policy development to the PPBE system.** The OCIO has coordinated closely with the Office of Planning, Programming, Budgeting, and Evaluation. This ensures that the OCIO planning processes remain directly linked into the NNSA PPBE system.



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**Completed the first data call for, and analysis of, the IT Portfolio database.** This project was completed with the CIOs from the Offices of Science and of Environmental Management. When fully implemented, the IT Portfolio will provide a crosscut of information management funding and provide a complete inventory of information technology assets in the NNSA enterprise (federal and contractor).

## **2. Plans for FY 2002 and beyond**

**Integrate information management and program planning.** The first priority of the OCIO is to fully integrate information management planning into NNSA's programmatic planning processes. This will ensure that the OCIO makes appropriate information management technologies available to the NNSA in a timely and cost-effective manner and that those technologies are then appropriately exploited to achieve NNSA's programmatic goals. In order to accomplish this, the OCIO is developing a quality inventory of the information management resources currently available within the NNSA enterprise; identifying the current and long-term deficiencies in that inventory; and developing and implementing the NNSA-wide policies and procedures necessary to address those deficiencies, including the implementation of an information technology capital planning process. OCIO will be a full participant in NNSA's FY 2004 planning and budgeting processes. Planning will be completed to provide the IT investments necessary to fully support NNSA programmatic requirements and to complete the integration of the NNSA IT enterprise.

Actual integration efforts in support of achieving an NNSA enterprise-wide information management architecture will include consolidating the multiple NNSA headquarters information environments down to a single environment, as well as extending the operational scope of the IT Enterprise and Site-Specific Contract to include additional federal sites. It is expected that the federal information environment will be fully integrated and interoperable by the end of FY 2003. Verification of the viability of its ongoing information assurance program will be obtained with the completion of independent security posture reviews at its sites during FY 2002.

## **3. Challenges**

The primary challenge facing OCIO is to establish an effective and comprehensive information management planning process. Severe financial constraints will slow its efforts to put in place an integrated, interoperable information management architecture and to provide information assurance improvements. NNSA must also accomplish the following:

- Define the relationship between NNSA and the Department of Energy.
- Develop appropriate means to ensure that coordinated planning is actively implemented in the field.
- Determine the appropriate role of scientific computing activities within the OCIO planning process.

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## Appendix

### A Summary of Past Management Reviews

The following four external evaluation reports reviewed by NNSA reached remarkably similar findings concerning the management challenges that exist within the Department of Energy and the National Nuclear Security Administration:

1. The ***PFIAB Report***, for example, concluded: “Multiple chains of command and standards of performance negated accountability, resulting in pervasive inefficiency, confusion, and mistrust.”<sup>22</sup>
2. The ***Chiles Commission Report*** found the following:

From the field’s perspective, the government management structure exhibits fuzzy lines of authority, no accountability, and inconsistent direction, stemming from a lack of a defined oversight process and the fact that government overseers have not established a common understanding of what it means to be “safe.” This translates into day-to-day frustrations among those in the field performing hands-on stewardship tasks.<sup>23</sup>

This report concluded: “These issues are not new. The Galvin Commission saw the same thing earlier this decade. They also were noted when DOE commissioned the ‘120 Day Study’ of weapon program management.”<sup>24</sup>

3. The ***120-Day Study***, which focused on the management of the nuclear weapons program, observed in regard to chains of command: “The overall picture that emerges is one of considerable confusion over vertical relationships and the roles of line and staff officials.”<sup>25</sup> That study also contained the following illustration (reproduced on the following page) to graphically demonstrate the observation of the Institute for Defense Analysis concerning organizational confusion.

The ***120-Day Study*** emphasized the positive role of formal contracting officials in eliminating uncoordinated direction from different organizations:

The exceptions to this behavior [micromanagement] are sites where the contracting officer insists that any direction to the contractor flow through him, allowing him to serve as a filter and to ensure that the contractor is presented with a single agenda and priorities. A few officials recognized that one responsibility of the contracting officer is to say “no” to government staff who are inappropriately exercising line authority.<sup>26</sup>

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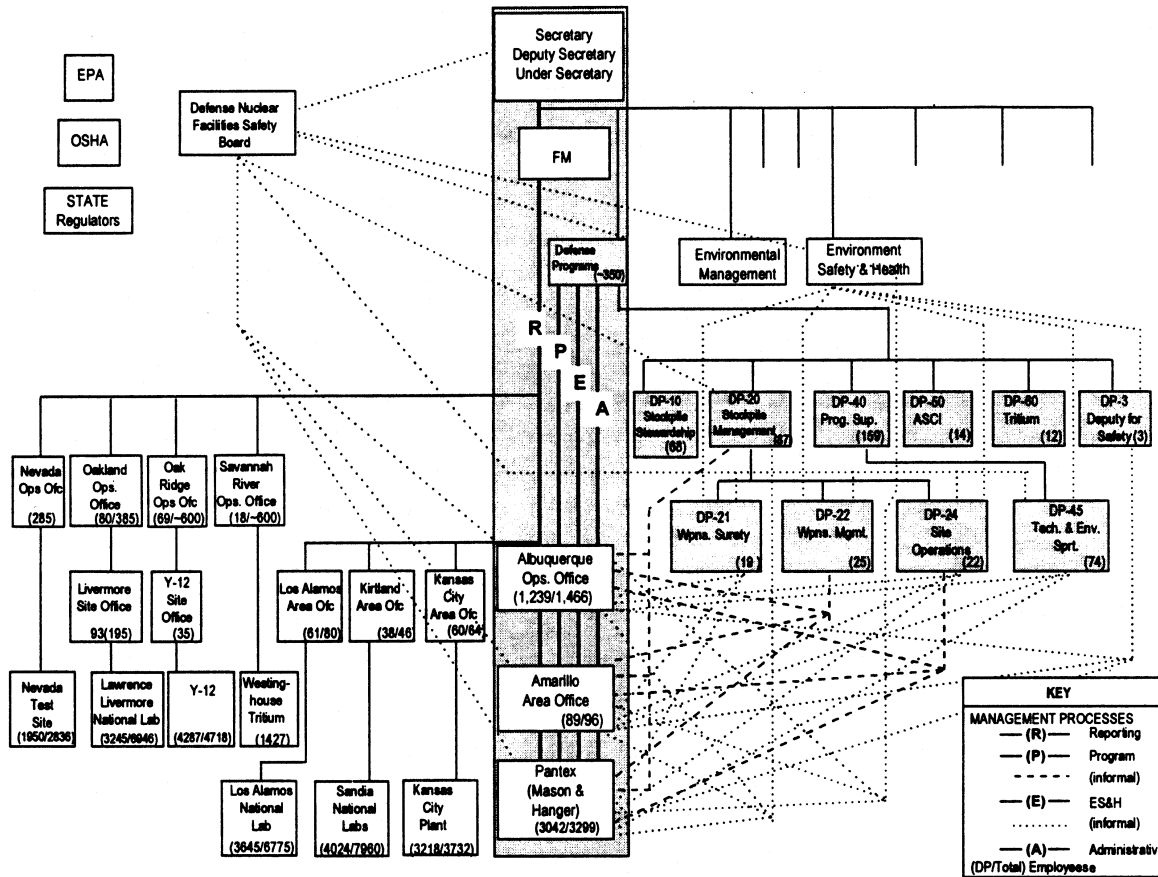
<sup>22</sup> *PFIAB Report*, p. i.

<sup>23</sup> *Chiles Commission Report*, p. 17.

<sup>24</sup> Ibid.

<sup>25</sup> *120-Day Study*, p. I-8.

<sup>26</sup> *120-Day Study*, p. III-5.



4. The *Galvin Report* cataloged excessive oversight and micromanaging in an appendix to its report:

As a function of the detail with which the Congress prescribes what should be done in the laboratories and the Congress's obsession with the issue of accountability, the Department is driven both to honor the prescriptions from Congress and to overprescribe in order not to be at risk of failing to be super attentive to the Congress's intentions.

The net effect is that thousands of people are engaged on the government payroll to oversee and prescribe tens of thousands of how-to functions. The laboratories must staff up or reallocate the resources of its people to be responsive to such myriads of directives; more and more of the science-intended resources are having to be redirected to the phenomenon of accountability versus producing science and technology benefits.<sup>27</sup>

While each of the reports—except the *120-Day Study*—addressed organizational issues as part of a more focused effort (*PFIAB* – Security, *Chiles* – Critical Skills, and *Galvin* – Future of the Laboratories), four key themes emerge from these reports:

<sup>27</sup> *Galvin Report*, p. A-1.

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- **Confused accountability.** “Accountability has been spread so thinly and erratically that it is now almost impossible to find.”<sup>28</sup>
  - **“Stovepiping” and the failure to integrate functions.** Three of the major findings of the *120-Day Study* were (1) weak integration of programs and functions within Defense Programs, (2) weak integration of programs and functions across DOE, and (3) a weak link between requirements and budget direction.<sup>29</sup> The *Galvin Report* found “institutional fragmentation as a direct reflection of segmented management of the laboratories by the Department, which treats the laboratories not as integrated institutions—let alone a system of laboratories—but rather as a conglomerate of hundreds of individual projects . . . .”<sup>30</sup>
  - **Pervasive micromanagement.** “The increasing costs of dealing with review groups, both in resources and in their consumption both of senior and junior staff time, leads to paralysis and interferes with operations . . . .”<sup>31</sup>
  - **Too many federal overseers.** “There are too many DOE employees with overlapping and competing responsibilities for supervising and overseeing the contractors in the nuclear weapons program.”<sup>32</sup> “There are too many people in Defense Programs (and DOE) chasing too little work.”<sup>33</sup>

Reform initiatives during the past decade—such as performance-based contracting (which refocused the contracting relationship on the “whats,” rather than the “hows”) and the integrated safety management process (which resolved many of the oversight problems uncovered in earlier reports)—have made progress in addressing the issues raised by these reports; however, the NNSA Management Council concluded that much remains to be done to alleviate the problems captured by these four key reports.

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<sup>28</sup> *PFIAB Report*, p. 4.

<sup>29</sup> *120-Day Study*, pp. ES-2 and ES-3.

<sup>30</sup> *Galvin Report*, p. 8.

<sup>31</sup> *Galvin Report*, p. 53.

<sup>32</sup> *Chiles Commission Report*, p. viii.

<sup>33</sup> *120-Day Study*, p. IV-4.





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United States Department of Energy