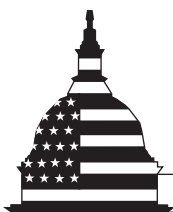


February 2011

NUCLEAR WEAPONS

NNSA Needs More Comprehensive Infrastructure and Workforce Data to Improve Enterprise Decision-making



G A O

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Why GAO Did This Study

The United States intends to invest about \$80 billion to maintain and modernize its nuclear weapons capabilities and infrastructure over the next decade. The National Nuclear Security Administration (NNSA), a semi-autonomous agency within the Department of Energy (DOE), maintains the nation's nuclear weapons through its Stockpile Stewardship Program (SSP). NNSA uses contractors to manage and operate eight separate sites, referred to as the nuclear security enterprise, to achieve the SSP's mission.

The National Defense Authorization Act for Fiscal Year 2010 directed GAO to review the SSP. This report focuses on the extent to which NNSA has the data necessary to make informed, enterprisewide decisions, particularly data on the condition of infrastructure, capital improvement projects, shared use of facilities, and critical human capital skills. GAO analyzed agency infrastructure data; reviewed agency directives and guidance; and interviewed DOE, NNSA, and contractor officials.

What GAO Recommends

GAO recommends that NNSA take four actions to ensure that it is equipped with the information needed to effectively and efficiently manage the SSP. NNSA stated that it understood and can implement GAO's recommendations.

NUCLEAR WEAPONS

NNSA Needs More Comprehensive Infrastructure and Workforce Data to Improve Enterprise Decision-making

What GAO Found

In its *FY 2011 Stockpile Stewardship and Management Plan*, NNSA outlines plans for substantial investments in important nuclear weapons capabilities and physical infrastructure. However, the agency lacks important enterprisewide infrastructure and workforce data needed for informed decision-making. In response to this shortcoming, which NNSA recognizes, the agency is considering the use of computer models that integrate data from across the enterprise, which, if fully realized, may give decision-makers a tool to take a broad and accurate assessment of the situation. Specifically,

- NNSA does not have accurate, reliable, or complete data on the condition and replacement value of its almost 3,000 weapons activities facilities. This is, in part, because NNSA has not ensured contractor compliance with a DOE directive that requires facility inspections at least once every 5 years. For example, according to data in DOE's Facilities Information Management System (FIMS), as of April 2010, 26 percent of facilities have either an inspection date outside of the 5-year period or no inspection date recorded. NNSA officials stated that they are aware of the limitations of FIMS data and told us that they use a variety of other methods to track site facility conditions, such as budget requests and daily dialogue with federal and contractor personnel at the sites.
- NNSA has identified 15 ongoing capital improvement projects as necessary to ensure future viability of the program, but the agency does not have estimated total costs or completion dates for all projects. For example, NNSA has not estimated total costs for the largest projects it is conducting—the Chemical and Metallurgy Research Replacement Facility at Los Alamos National Laboratory in Los Alamos, New Mexico, and the Uranium Processing Facility at the Y-12 Plant in Oak Ridge, Tennessee. DOE regulations do not require a total cost estimate until the initial design phase is complete, but without reliable cost and schedule data NNSA does not have a sound basis to justify decisions and planned budget increases.
- NNSA has identified a need to effectively manage facilities used by more than one site—known as shared use assets—and issued a directive in 2009 requiring identification of these assets and a review of the governance plan developed for each designated facility to ensure that the plans align with programmatic priorities and that users enterprisewide have well supported access to these facilities. However, NNSA has not collected data on shared use assets and has not reviewed individual management plans.
- NNSA lacks comprehensive data on the critical skills and levels needed to maintain the SSP's capabilities. NNSA primarily relies on its contractors to maintain the workforce and, while these efforts may be effective for a specific site, NNSA lacks assurance that the overall program is maintained. Without such data, NNSA cannot forecast the impact of programmatic actions or identify consequences of those actions. NNSA officials told GAO that the agency recently established an Office of Corporate Talent and Critical Skills to bring attention to these issues.

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Abbreviations

DOE	Department of Energy
CMRR	Chemistry and Metallurgy Research
FIMS	Facilities Information Management System
LANSCE	Los Alamos Neutron Science Center
M&O	management and operation
NNSA	National Nuclear Security Administration
PAC	Program Advisory Committee
SSP	Stockpile Stewardship Program
UPF	Uranium Processing Facility

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United States Government Accountability Office
Washington, DC 20548

February 14, 2011

The Honorable Carl Levin
Chairman
The Honorable John S. McCain
Ranking Member
Committee on Armed Services
United States Senate

The Honorable Howard P. McKeon
Chairman
The Honorable Adam Smith
Ranking Member
Committee on Armed Services
House of Representatives

Based on policy set forth in the *2010 Nuclear Posture Review*, a legislatively-mandated review in which the Administration established the nation's nuclear weapons requirements and policy, the United States intends to invest about \$80 billion over the next 10 years to support and modernize the nation's nuclear weapons capabilities and physical infrastructure. In response to the review, the National Nuclear Security Administration (NNSA)—a semi-autonomous agency within the Department of Energy (DOE) that maintains the nation's nuclear weapons through its Stockpile Stewardship Program (SSP)—established a *FY 2011 Stockpile Stewardship and Management Plan*, which provides additional details on the nation's nuclear direction.¹ As part of this plan and arms control treaties, the United States has agreed to reduce the size of its strategic nuclear weapon stockpile from a maximum of 2,200 to 1,550 weapons. Nonetheless, the remaining weapons in the stockpile continue to be an essential element of the U.S. defense strategy. As we have reported, the SSP faces a number of challenges in sustaining the stockpile of nuclear weapons over the long-term.² In particular, these weapons are aging to

¹NNSA was created in 1999 under Title 32 of the National Defense Authorization Act for Fiscal Year 2000, Pub. L. No. 106-65, § 3201 *et seq.*

²GAO, *Nuclear Weapons: Actions Needed to Identify Total Costs of Weapons Complex Infrastructure and Research and Production Capabilities*, [GAO-10-582](#) (June 21, 2010).

GAO, *Nuclear Weapons: Actions Needed to Address Scientific and Technical Challenges and Management Weaknesses at the National Ignition Facility*, [GAO-10-488](#) (Apr. 8, 2010).

well beyond their intended lifespan. Further, many of the facilities supporting the nuclear weapons program date back to the 1940s and 1950s Cold War era, and NNSA reported in its *Stockpile Stewardship and Management Plan* that they have become difficult and costly to maintain. In addition, the agency reported that an aging workforce and difficulty in recruiting personnel with specialized skills are resulting in the loss of knowledge, capabilities, and skills necessary to sustain the nation's nuclear weapons program and maintain the stockpile.

The United States ceased underground nuclear testing in 1992, and current national policy prohibits the development of newly designed nuclear weapons. In lieu of testing and producing new weapons, NNSA relies on science-based activities, such as analytical simulations and laboratory experiments, to ensure the existing weapons remain safe and reliable. In addition, NNSA refurbishes weapons in the stockpile to extend their operational lives. NNSA carries out these activities through several thousand facilities located at eight geographically dispersed government-owned, contractor-operated sites, which include three national laboratories, four production sites, and one test site. Collectively, these sites are referred to as the nuclear security enterprise. At these sites, nearly 24,000 management and operation (M&O) contractor employees support the nation's nuclear weapons through, among other things, computer modeling, dismantlement of weapons, storage of nuclear material, weapon component production, and non-nuclear tests and experimentation on weapons and weapons components. NNSA recognizes in the *Stockpile Stewardship and Management Plan* that it must effectively manage resources dedicated to the nuclear weapons program to ensure the nation's nuclear weapons remain safe, secure, and reliable. To do so, NNSA reported in an internal document that it is committed to creating an interdependent, efficient enterprise by, in part, integrating and aggregating data from across the sites to create an interconnected and comprehensive view of the products, people, and facilities of the enterprise.³

The National Defense Authorization Act for Fiscal Year 2010⁴ directed GAO to conduct a review of selected elements of the SSP. We briefed the Senate and House Armed Services Committees of our findings in July 2010. This report provides the results of additional audit work completed after

³NNSA, *Enterprise Modeling Consortium, Program Plan for FY10-FY12* (Dec. 1, 2009).

⁴Pub. L. No. 111-84, § 3133 (1999).

our briefing and focuses on the extent to which NNSA has the data necessary to make informed, enterprisewide decisions, particularly the extent to which it has identified the condition and value of existing infrastructure, developed cost estimates and completion dates for planned capital improvement projects, managed shared use assets within the enterprise, and inventoried the critical human capital skills needed to maintain the SSP.

In conducting our work, we reviewed NNSA documents and directives, including the 2010 *Nuclear Posture Review* and the *FY 2011 Stockpile Stewardship and Management Plan*; met with DOE, NNSA, and contractor officials; assessed the reliability of the data provided; and visited four of the eight enterprise sites. To determine the condition of nuclear weapons facilities, we reviewed M&O contractor's 10-year site plans for each enterprise site and obtained and analyzed data from DOE's Facilities Information Management System (FIMS). However, we determined during our analysis of the data that the inspection dates for some of its facilities were missing or out of date and the replacement property values were inconsistent across the enterprise. As a result, we do not believe the condition index data are sufficiently reliable for presenting the condition of existing infrastructure. Furthermore, we toured a nonrandom sample of facilities at the Los Alamos and Sandia National Laboratories in New Mexico, the Pantex Plant in Texas, and the Nevada National Security Site.⁵ In selecting our site visit locations, we considered a number of factors, including the type of site (production, laboratory, or test); missions carried out at the sites; the potential for shared use facilities; and geographic location. The data we obtained from our site visits are used as examples and cannot be generalized to indicate condition throughout the nuclear security enterprise. To determine NNSA's plans for improvements to enterprise infrastructure, we collected and analyzed information from agency officials on all capital improvement projects identified by NNSA as ongoing projects. To determine the extent to which NNSA has identified shared use facilities within the enterprise and how these facilities are managed, we reviewed NNSA's 2009 facility governance directive and met with NNSA, Los Alamos, and Sandia officials to discuss shared use facilities. To determine NNSA's efforts to maintain the critical human capital skills of the SSP, we reviewed NNSA's *Development of the NNSA Critical/Capability Inventory* draft report and the *Report of the Commission on Maintaining United States Nuclear*

⁵In August 2010, NNSA renamed the Nevada Test Site to the Nevada National Security Site.

Weapons Expertise. A more detailed description of our scope and methodology is presented in appendix I.

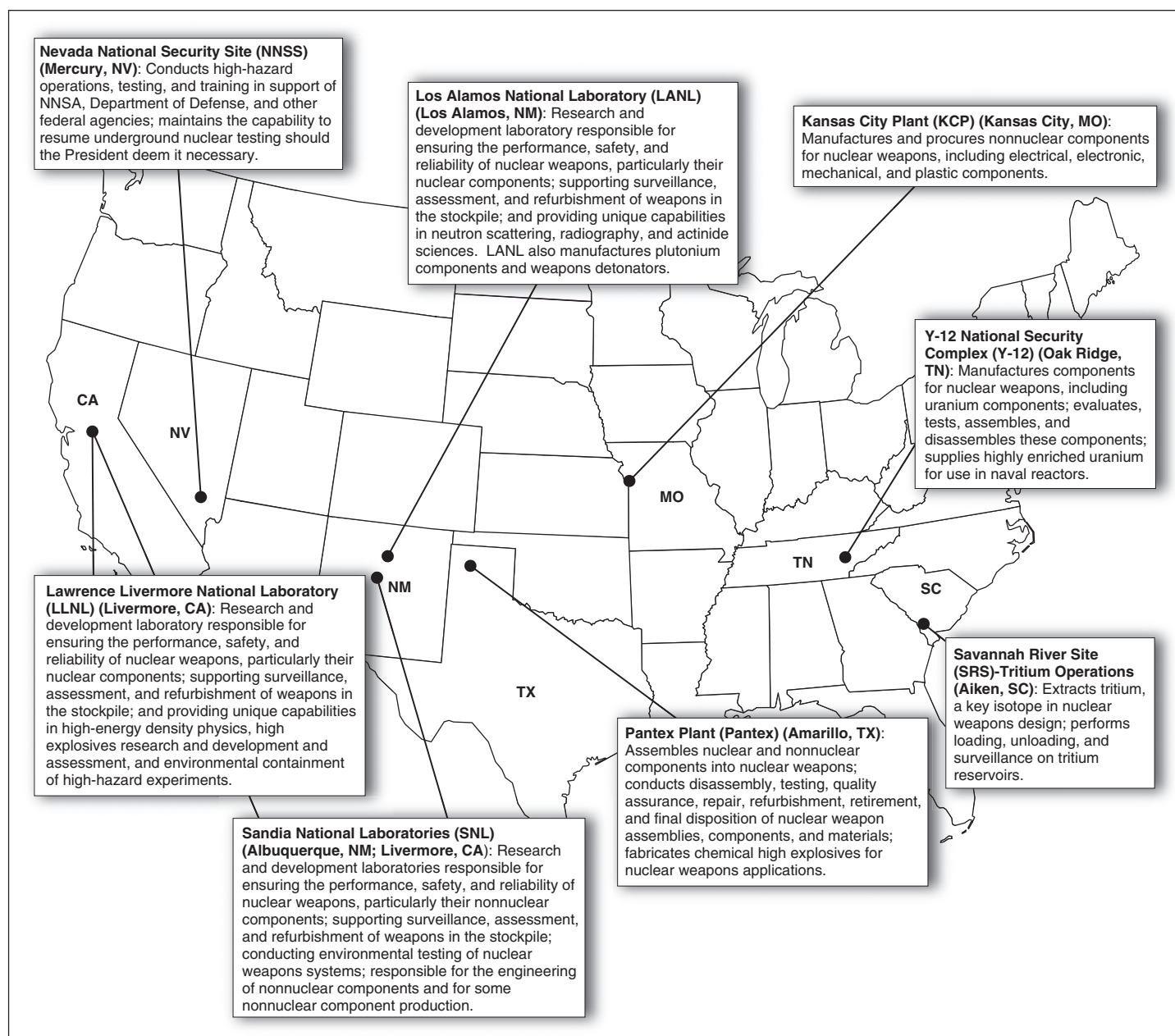
We conducted this performance audit from January 2010 to February 2011 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

In 1993, DOE, at the direction of the President and Congress, established the SSP to sustain the safety and effectiveness of the nation's nuclear weapons stockpile without returning to the use of underground nuclear tests.⁶ NNSA administers the program through its Office of Defense Programs. This responsibility encompasses many different tasks, including the manufacture, storage, assembly, nonnuclear testing, qualifying, and dismantlement of weapons in the stockpile. To accomplish the mission of the program, the Office of Defense Programs relies on private M&O contractors to carry out various tasks at each of the nuclear security enterprise sites. (See fig. 1.) NNSA reimburses its M&O contractors under cost-reimbursement-type contracts for the costs incurred in carrying out the department's missions. The contractors, in turn, may subcontract out major portions of their work, especially in mission-support areas such as constructing and maintaining facilities. While most day-to-day activities are managed and operated by the various contractors, NNSA is responsible for the planning, budgeting, and ensuring the execution of interconnected activities across the eight sites that comprise the enterprise.

⁶The National Defense Authorization Act for Fiscal Year 1994, Pub. L. No. 103-160, § 3138 (1993), directed DOE to establish the Stockpile Stewardship Program.

Figure 1: Nuclear Security Enterprise Sites



Sources: NNSA; Map Resources (map).

Nuclear weapons are technically complex devices with a multitude of components and over time, a weapon's reliability could decline unless mitigating precautions are taken. Since the establishment of the SSP, NNSA has worked with its M&O contractors to provide data on weapon phenomena through science-based approaches that assess the safety and reliability of the weapons in the stockpile and that seek to extend their operational lives. As a result of these efforts, since 1996, the Secretaries of Energy and Defense have provided the President with independent reports prepared individually by the directors of the three weapons laboratories and the Commander of the U.S. Strategic Command confirming that the stockpile is safe and reliable and that there is no need to resume underground nuclear testing.

During the past 15 years, Congress has made significant investments in the nation's stockpile stewardship capabilities, and NNSA has identified a number of accomplishments it has achieved in fulfilling the SSP mission. For example, the SSP has completed a life extension program for one warhead; conducted numerous weapon alterations to address safety, reliability, or performance issues; and has dismantled more than 7,000 nuclear weapons since fiscal year 1991. Further, the SSP reestablished the capability to produce plutonium pits—a key component of nuclear warheads.

In its recently released *Stockpile Stewardship and Management Plan for Fiscal Year 2011*, NNSA stated that the SSP's mission is dependent upon the enterprise's facilities and physical infrastructure and the critical skills of its workforce.

Facilities and Infrastructure. NNSA's real property portfolio dedicated to its nuclear weapons mission is vast, with thousands of facilities and associated infrastructure. A number of these facilities are unique national assets used for research and development. As such, while individual contractors operate a given facility, its capabilities may be needed to support users and activities across the enterprise.

NNSA has three categories of facilities and infrastructure that indicate the extent to which they are critical to the achievement of the SSP. These categories are:

- (1) *Mission critical.* Facilities and infrastructure that are used to perform activities—such as nuclear weapons production, research and development, and storage—to meet the highest-level SSP goals, without which operations would be disrupted or placed at risk.

-
- (2) *Mission dependent, not critical.* Facilities and infrastructure—such as waste management, nonnuclear storage, and machine shops—that play a supporting role in meeting the SSP’s goals, without which operations would be disrupted only if they could not resume within 5 business days.
- (3) *Not mission dependent.* Facilities and infrastructure—such as cafeterias, parking structures, and excess facilities—that do not link directly to SSP goals but support secondary missions or quality-of-workplace initiatives.⁷

Many of the facilities and infrastructure of the enterprise were constructed more than 50 years ago, and NNSA has reported that they are reaching the end of their useful lives. NNSA is undertaking a number of capital improvement projects to modernize and maintain these facilities. To identify and prioritize capital improvement project needs, NNSA is to follow DOE directives and guidance for project management. Among these is DOE Order 413.3A,⁸ which establishes protocols for planning and executing a project. The protocols require DOE projects to go through a series of five critical decisions as they enter each new phase of work:

- Critical decision 0. Approves a mission-related need.
- Critical decision 1. Approves the selection of a preferred solution to meet a mission need and a preliminary estimate of project costs based on a review of a project’s conceptual design.
- Critical decision 2. Approves that a project’s cost and schedule estimates are accurate and complete based on a review of the project’s completed preliminary design.
- Critical decision 3. Reaches agreement that a project’s final design is sufficiently complete and that resources can be committed toward procurement and construction.

⁷In fiscal year 2009, NNSA categorized its over 4,500 facilities and infrastructure in these three categories.

⁸DOE Order 413.3A, *Program and Project Management for the Acquisition of Capital Assets*.

-
- Critical decision 4. Approves that a project has met its completion criteria or that or that the facility is ready to start operations.

To oversee projects and approve these critical decisions, NNSA conducts its own reviews, often with the help of independent technical experts.

Critical Human Capital Skills. NNSA reports that sustaining a large number of critical skills throughout the enterprise is central to the mission of the SSP. The importance of these critical skills has been of interest to Congress for a number of years. For example, in the National Defense Authorization Act of Fiscal Year 1997, Congress established the Commission of Maintaining United States Nuclear Weapons Expertise (referred to as the Chiles Commission). Congress tasked the commission to review ongoing efforts of DOE to attract scientific, engineering, and technical personnel and to develop a plan for the recruitment and retention within the DOE nuclear weapons complex. The Chiles Commission reviewed efforts across the enterprise and developed a number of recommendations, including the need to develop and implement a detailed and long-term site-specific and enterprisewide plan for replenishing the nuclear weapons workforce. NNSA reported in its response to Congress that it will take a number of actions, including giving greater attention to ensuring sites devote adequate resources to critical skills generation, retention, and regeneration.

NNSA Lacks Key Data Required to Make Informed, Enterprisewide Decisions, but Is Considering the Use of Computer Models That May Help Address Some Shortcomings

NNSA lacks comprehensive data needed for informed enterprisewide decision-making; however, according to a NNSA official and agency documents, NNSA is considering the use of computer models that may help to address some of these critical shortcomings.

NNSA Lacks Comprehensive Data Required to Make Informed, Enterprisewide Decisions

We found that NNSA lacks complete data on (1) the condition and value of its existing infrastructure, (2) cost estimates and completion dates for planned capital improvement projects, (3) shared use facilities within the enterprise, and (4) critical human capital skills in its M&O contractor workforce needed to maintain the SSP.

Facilities and Infrastructure Data. NNSA does not have accurate and reliable data on the condition and replacement value of its facilities and other infrastructure.⁹ This is in part because NNSA (1) has not ensured that contractors comply with a DOE directive¹⁰ that requires facility inspections at least once every 5 years, and (2) does not ensure consistency among the varying approaches and methodologies contractors use when determining replacement property value.¹¹

DOE requires its sites—including those within the nuclear security enterprise—to assess the condition of all real property at least once during any 5-year period.¹² Sites are to use the results of these assessments to identify maintenance costs, which are then compared to the replacement property value for the facility. Using this information, DOE is to calculate a condition index for each of its facilities and other infrastructure. While DOE requires periodic condition assessments, in our analysis of data in DOE's agencywide infrastructure database, the Facilities Information Management System (FIMS), we found 765 of DOE's 2,897 weapons activities facilities, or 26 percent, have not met this requirement—having either an inspection date outside of the 5-year period or no inspection date

⁹In May, 2003, the DOE Inspector General issued a report that examined whether NNSA had accurate and useful data to aid in the prioritization of infrastructure renovation repair projects. The report found that NNSA did not have accurate assessments of the structural and mechanical condition at one of its site's facilities. Specifically, the report found NNSA relied on out-of-date information found on facility condition assessments to support its strategic planning activities. DOE, *Planning for National Nuclear Security Administration Infrastructure*, OAS-B-03-02 (Washington, D.C.: 2003). In addition, in June, 2010, we reported that NNSA cannot accurately identify the total costs to operate and maintain weapons facilities and infrastructure because of differences in sites' cost accounting practices. NNSA agreed with the findings of our report. GAO, *Nuclear Weapons: Actions Needed to Identify Total Costs of Weapons Complex Infrastructure and Research and Production Capabilities*, [GAO-10-582](#) (Washington, D.C.: June 21, 2010).

¹⁰DOE Order 430.1B: *Real Property Asset Management*.

¹¹Replacement property value is the cost to replace a current structure with a new one of comparable size using current technology, codes, standards, and materials.

¹²DOE states in its directive that some real property assets, such as mission critical facilities, may require a more frequent inspection cycle.

recorded (see table 1). NNSA officials report that FIMS is the only centralized repository for infrastructure data and that the agency, in part, relies on these data to support funding decisions.

Table 1: Number of Facilities and Structures That Do Not Meet DOE’s Inspection Requirement (by Mission Category), as of April 2010

Mission category	Total number of facilities	Inspection date before April 2005	No inspection date recorded in FIMS	Percent of total facilities with either an inspection date prior to April 2005 or no date recorded
Mission critical	212	1	6	3
Mission dependent, not critical	1,057	225	24	24
Not mission dependent	692	66	149	31
Other structures and facilities	936	25	269	31
Total	2,897	317	448	26

Source: GAO analysis of DOE’s FIMS data.

Notes: Analysis limited to facilities DOE identified as supporting NNSA’s weapons activities that were built before April 2005 and identified as being in “operational” status.

Other structures and facilities are any fixed real property improvements to land not classifiable as a building or trailer, e.g., bridges, towers, roads, and fences.

In response to our draft report, NNSA officials stated that a number of facilities were either inspected or that an inspection date was recorded in FIMS between April 2010 and January 2011. NNSA officials also told us that based on analysis the agency conducted of FIMS data in January 2011, the majority of facilities and structures that do not meet DOE’s inspection requirement are other structures and facilities that are not mission dependent. The officials further stated that, based on their analysis, as of January 2011, 1 percent of mission critical buildings and 16 percent of mission dependent, not critical buildings have either an inspection date outside of the 5-year period or no inspection date recorded. We did not independently verify the agency’s analysis of the data.

Further, we found that sites used varying approaches and methodologies in determining deferred maintenance and replacement property values, but did so without validation from NNSA that the various methods were consistent with base criteria and could be aggregated for decision-making purposes. In fact, during an inspection conducted in July 2008 of one site’s approach, NNSA found that the methodology for determining deferred maintenance and replacement property values were “suspect, difficult to validate, and unreliable.” In addition, the agency stated in the inspection report that it was concerned that the site’s approach for conducting inspections was resulting in inconsistent calculation of repair and maintenance costs from year to year. NNSA conducted a follow-up assessment in April 2010 and reported that the site had made progress in addressing the concerns highlighted in the 2008 assessment but significant efforts are still needed to reach satisfactory levels.

A site official at one location also told us that even though the site complied with DOE requirements to conduct an inspection of all facilities at least once every 5 years, NNSA's data on facility and infrastructure condition for that site is not always accurate because an inspection from 3 to 5 years ago does not always reflect the rapid degradation of some facilities. In particular, the official noted that, in the last 2 years, the site experienced about \$36 million of unplanned facility maintenance. NNSA officials stated that they are aware of the limitations of FIMS data and know that conditions change more rapidly than can be tracked by 5-year assessments. As a result, NNSA officials told us the agency also uses a variety of other methods to track site facility conditions, including budget requests, regularly updated planning documents, and daily dialogue with federal and contractor personnel at the sites. However, as we have reported, agencies that have a centralized database with accurate and reliable data on their facilities can better support investment decisions in planning and budgeting.¹³

Data on Capital Improvement Projects. NNSA does not have estimated total costs or completion dates for all planned capital improvement projects. While NNSA identified each of its ongoing projects as necessary to ensure future viability of the program, without more complete information on these projects NNSA cannot identify how the timing of these projects impacts other projects or how delays could increase costs and impact budgetary requirements in future year planning.

NNSA identified 15 ongoing capital improvement projects to replace or improve existing infrastructure (see app. II for detailed information on each capital improvement project). The status of these projects range from preliminary design to completion, with some projects scheduled for completion in 2022. The estimated cost associated with the ongoing projects range from \$35 million for the replacement of fire protection piping at the Pantex Plant in Amarillo, Texas, to up to \$3.5 billion for construction of the Uranium Processing Facility (UPF) at the Y-12 Plant in Oak Ridge, Tennessee. However, NNSA does not have key information for a number of these projects, including initial estimates for cost, amount of remaining funding needed to complete the project, or completion dates. NNSA officials offered two explanations for this lack of complete

¹³GAO, *Federal Real Property: Progress Made Toward Addressing Problems, but Underlying Obstacles Continue to Hamper Reform*, [GAO-07-349](#) (Washington, D.C.: Apr. 13, 2007).

information. First, they said that the lack of data is due in part to the early design phase for some of these projects. For example, NNSA's highest infrastructure priorities—CMRR and UPF—are still in design and according to NNSA officials final cost estimates for capital improvement projects will not be available until design is 90 percent complete. NNSA's current estimate prepared in 2007 for UPF indicates the project will cost between \$1.4 and \$3.5 billion to construct. As we recently reported,¹⁴ the 2007 figure is more than double the agency's 2004 estimate of between \$600 million and \$1.1 billion. In addition, we reported that the costs for project engineering and design, which are less than halfway completed, have increased by about 42 percent—from \$297 to \$421 million. For CMRR, as of October 2010, NNSA did not provide us with an estimated completion cost for the project but based on information reported in the *Stockpile Stewardship and Management Plan* the agency is using a planning figure of approximately \$8 billion for completion of both UPF and CMRR. In response to our reports, DOE and NNSA have recently initiated a number of actions that, if fully implemented, may improve its management of capital improvement projects.

Second, a NNSA official told us that changes in project scope and unforeseen complications have hindered the agency's ability to estimate costs and completion dates for some projects. For example, an NNSA official said that the project to upgrade the Radioactive Liquid Waste Treatment facility at Los Alamos National Laboratory had an initial cost estimate of \$82 to \$104 million, but site officials at Los Alamos reported to NNSA a need to change the building materials used in the original design estimate. As a result, the NNSA official told us this project is estimated at over \$300 million.

Our prior work has identified persistent problems at NNSA with cost overruns and schedule delays for capital improvement projects.¹⁵ For example, we found that NNSA's National Ignition Facility—a high energy laser that NNSA reports will improve its understanding of nuclear

¹⁴GAO, *Nuclear Weapons: National Nuclear Security Administration's Plans for Its Uranium Processing Facility Should Better Reflect Funding Estimates and Technology Readiness*, [GAO-11-103](#) (Washington, D.C.: Nov. 19, 2010).

¹⁵GAO, *Department of Energy: Major Construction Projects Need a Consistent Approach for Assessing Technology Readiness to Help Avoid Cost Increases and Delays*, [GAO-07-336](#) (Washington, D.C.: Mar. 27, 2007). GAO, *Nuclear Weapons: Actions Needed to Address Scientific and Technical Challenges and Management Weaknesses at the National Ignition Facility*, [GAO-10-488](#) (Washington, D.C.: Apr. 8, 2010).

The submission and review process for use of the LANSCE facility at Los Alamos National Laboratory

1. Prospective users are encouraged to contact LANSCE scientists to discuss their proposed research.
2. Prospective users submit a formal proposal.
3. A LANSCE scientist reviews the proposal and the safety and security checklist and comments on the practical feasibility, environmental safety and health, and security aspects of the proposed work.
4. LANSCE Program Advisory Committee (PAC) reviews proposal for scientific quality.
5. The results of the PAC ratings are used by the scientists-in-charge of the flight paths to draft a schedule for the flight paths.
6. LANSCE user facility director reviews the proposed schedule and balances PAC recommendations with available resources and programmatic importance to decide which proposals will be scheduled during the next cycle.
7. The LANSCE user office contacts the user and informs him/her of the proposal's approval and schedule.

Source: GAO analysis of Los Alamos National Laboratory data.

weapons—was \$1 billion over budget, and over 5 years in delays. As we have reported, without reliable information on costs and schedules, NNSA will not have a sound basis for making decisions on how to most effectively manage its portfolio of projects and other programs and will lack information that could help justify planned budget increases or target cost savings opportunities.¹⁶

Shared Enterprise Assets. NNSA lacks complete data to ensure that facilities with unique capabilities that are used by more than one site—known as shared assets—are effectively utilized. The enterprise comprises numerous state-of-the-art research facilities that NNSA describes as being unique national assets. These shared assets, which are found at the national weapons labs, plants, and test site, represent a large and continuing investment of U.S. resources and offer advanced science and technology capabilities that are desirable for solving problems throughout the enterprise. NNSA delegates responsibility for operating authority of these facilities to its M&O contractors, though NNSA broadly defines the scope of work to be performed at a facility. According to NNSA and site officials, the process to determine specific users and individual activities at the facilities are managed by each individual facility. For example, the Los Alamos Neutron Science Center (LANSCE)—a powerful proton accelerator used for, among other things, nuclear weapons research—has a management plan governing its submission and review process for shared use of the facility that only applies to LANSCE. Other shared assets operate under their own management plans.

NNSA has identified a need to effectively manage these assets enterprisewide to ensure that programmatic priorities are addressed and that users enterprisewide have well supported access to these facilities. In February 2009, NNSA developed a directive¹⁷ stating that the Assistant Deputy Administrators within the Office of Defense Programs will (1) select and approve the research and development facilities to be designated as shared assets, and (2) review and concur on the governance plan developed for each designated facility. However, we found that NNSA does not have information on which facilities are designated as shared use assets, and a NNSA official told us the agency has not reviewed individual management plans throughout the enterprise to ensure that each facilities'

¹⁶GAO-10-199 and GAO-10-582.

¹⁷NA-1 SD M 452.3: *Managing the Operation of Shared NNSA Assets and Shared National Resources*.

submission and review process for use of the facility provides for adequate enterprisewide access.

Critical Human Capital Skills. NNSA lacks comprehensive information on the status of its M&O contractor workforce. Specifically, the agency does not have an enterprisewide workforce baseline of critical human capital skills and levels for the contractor workforce to effectively maintain the capabilities needed to achieve its mission. NNSA officials said this is primarily because NNSA relies on its contractors to track these critical skills.¹⁸ While contractor efforts may be effective at a specific site, these efforts do not ensure long-term survival of these skills across the enterprise, nor do they provide NNSA with the information needed to make enterprisewide decisions that have implications on human capital.

NNSA reports in the *Stockpile Stewardship and Management Plan* that sustaining a large number of critical capabilities throughout the enterprise is central to the mission of stockpile stewardship and that maintaining the right mix of skills is a significant challenge. The agency also reported that the enterprise is losing critical capabilities, stating that the M&O contractor workforce has been reduced significantly in the past 20 years, which has decreased the availability of personnel with required critical skills.¹⁹ Further, NNSA stated in a 2009 internal human capital critical skills report that the site-based independent approach to sustaining key capabilities has not always been sufficient.²⁰ For example, NNSA reported that increased retirements and higher than normal turnover rates have depleted the intellectual and technical knowledge and skills needed to sustain critical capabilities. Specifically, in that report, NNSA attributed problems that caused delays on an ongoing life extension program to the loss of skilled employees.

Over the last several years, there have been many efforts to characterize the state of the critical human capital skills associated with the enterprise and to project its availability. In its 2009 internal human capital critical skills report, NNSA identified some preliminary actions it needs to take to maintain critical skills, which include (1) identifying enterprisewide

¹⁸We are currently conducting a review of these M&O contractors' human capital programs.

¹⁹*FY 2011 Stockpile Stewardship and Management Plan* (May 2010).

²⁰Development of the NNSA Critical Skill/Capability Inventory (Draft Report—November 2009).

functions and critical skills needs, (2) establishing common language and definitions across the enterprise, (3) assessing the current state of the program, and (4) identifying potential solutions to attract and retain critical skills. These actions are consistent with best practices we reported on human capital issues.²¹ Specifically, our work has shown that the ability of federal agencies to achieve their missions and carry out their responsibilities depends in large part on whether they can sustain a workforce that possesses the necessary education, knowledge, skills, and competencies. To do so, agencies need to be aware of the number of employees they need with specific skills, competencies, and levels that are critical to achieving their missions and goals, and identify any gaps between their current workforce and the workforce they will need in the future. Identifying mission-critical occupations, skills, and competencies can help agencies adjust to changes in technology, budget constraints, and other factors that alter the environment in which they operate.

Nevertheless, NNSA officials told us that the agency had, until recently, made limited progress completing these actions. In October 2010, however, NNSA established the Office of Corporate Talent and Critical Skills to bring focused attention to meeting critical human capital skills and announced that the agency hired a director to develop and implement a critical skills sustainment strategy. The newly hired Director told us that NNSA has begun the process of reassessing the need for the activities identified in the 2009 report to be completed but has not yet established time frames or milestones for completing these efforts. In addition, NNSA officials stated that the agency sponsors academic outreach programs to provide a linkage between the agency and the talent that have the skills needed to complete certain SSP activities.

NNSA Is Considering the Use of Computer Models That May Improve Its Enterprise Decision-Making Capability

NNSA, recognizing that its ability to make informed enterprisewide decisions is hampered by the lack of comprehensive data and analytical tools, is considering the use of computer models—quantitative tools that couple data from each site with the functions of the enterprise—to integrate and analyze data to create an interconnected view of the enterprise, which may help to address some of the critical shortcomings we identified. A NNSA official told us that if the enterprise modeling

²¹GAO, *Workforce Planning: Interior, EPA, and the Forest Service Should Strengthen Linkages to Their Strategic Plans and Improve Evaluation*, [GAO-10-413](#) (Washington, D.C.: Mar. 31, 2010).

efforts are fully realized it will give decision-makers an additional tool to take a broad and accurate assessment of the enterprise and to highlight the interdependencies between various components of the enterprise so that trade-offs between costs and benefits can be analyzed.

In July 2009, NNSA tasked the eight M&O contractor sites to form an enterprise modeling consortium. NNSA stated in a *2009 Enterprise Modeling Consortium Project Plan for FY 2010-2012* that the consortium is responsible for leading efforts to acquire and maintain enterprise data, enhance stakeholder confidence, integrate modeling capabilities, and fill in any gaps that are identified. Since its creation, the consortium has identified areas in which enterprise modeling projects could provide NNSA with reliable data and modeling capabilities, including infrastructure and critical skills. In addition to identifying these areas, a NNSA official told us its first steps are to build a collection of “trusted data sources” and inventory of the existing models used throughout the enterprise. Once the initial phase is complete, the official told us it will work with the sites to assess the various data collected across the enterprise, identify any data gaps, and then determine whether an existing approach can be integrated across the sites to provide NNSA with consistent and reliable enterprise data.

A NNSA official told us that they are in the process of developing a plan of action for fiscal year 2011 outlining the next steps and identifying goals and milestones. As the benefits of these tools depend on the quality of the data, the official stated that a key action for fiscal year 2011 will be to determine the accuracy and reliability of data that will populate the models.

Conclusions

NNSA faces a complex task planning, budgeting, and ensuring the execution of interconnected activities across the eight M&O contractor sites that comprise the nuclear security enterprise. Among other things, maintaining government-owned facilities that were constructed more than 50 years ago and ensuring M&O contractors are sustaining critical human capital skills that are highly technical in nature and limited in supply are difficult undertakings. Congress has long insisted that, as prerequisite to the modernization of the nuclear stockpile and supporting infrastructure, the current and past administrations develop firm nuclear weapons policy, requirements, and plans. With the completion of the congressionally-mandated *Nuclear Posture Review* and the *Stockpile Stewardship and Management Plan*, the Administration has made strides to meet congressional expectations. In doing so, it has pledged billions of dollars

over the next decade to improve key stockpile stewardship capabilities, modernize and, in some cases, replace aging infrastructure, and maintain a highly skilled and specialized workforce in order to ensure the continued safety, reliability, and performance of our nuclear deterrent without returning to underground nuclear testing. For NNSA to fully meet expectations, however, it must be able to demonstrate to Congress that it can effectively manage its program so that planned budget increases are targeted to areas that will produce demonstrable returns on investments. While this task is far broader and more challenging than the scope of this report, certain data related issues are currently hindering NNSA's enterprisewide decision-making capabilities and its ability to justify programmatic choices to Congress. These include the lack of (1) consistent, accurate, and complete data on the condition of its facilities; (2) assurance that contractors are in compliance with a DOE directive (DOE Order 430.1B) requiring facility inspections to ensure that sites' varying approaches in determining deferred maintenance and real property values are valid and consistent; (3) information on shared use assets—although a NNSA directive (NNSA Supplemental Directive M 452.3) identifies the need for the federal and contractor officials to identify and ensure proper governance of these assets; and (4) comprehensive data on its M&O contractors' workforce—to include identification of critical human capital skills, competencies, and staffing levels—as well as a plan with time frames and milestones for collecting this data. Continuing to make decisions without a full understanding of programmatic impact is not the most effective approach for program management or use of federal resources.

Recommendations for Executive Action

We recommend the Administrator of NNSA take the following four actions.

To ensure that NNSA is equipped with the information needed to effectively and efficiently manage the Stockpile Stewardship Program:

- Develop standardized practices for assessing the condition of its facilities and review the sites' methodologies for determining replacement value to ensure consistency, accuracy, and completeness throughout the enterprise.
- Ensure contractor compliance with DOE Order 430.1B: *Real Property Asset Management*, which requires routine inspections of all facilities.

-
- Ensure federal and contractor compliance with NNSA Supplemental Directive NA-1 SD M 452.3: *Managing the Operation of Shared NNSA Assets and Shared National Resources*, which requires NNSA's sites to identify shared assets and NNSA to review the governance plans developed for each facility.
 - Establish a plan with time frames and milestones for the development of a comprehensive contractor workforce baseline that includes the identification of critical human capital skills, competencies, and levels needed to maintain the nation's nuclear weapons strategy.

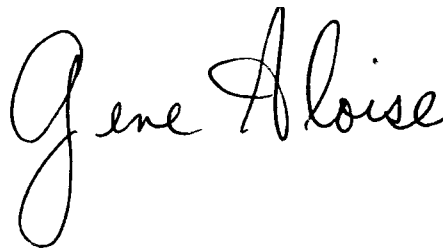
Agency Comments and Our Evaluation

We provided NNSA with a draft of this report for their review and comment. NNSA provided written comments, which are reproduced in appendix III. NNSA stated that it understood our recommendations and believes that it can implement them. NNSA did state, however, that it believed the report provided an incomplete picture of how the agency makes enterprisewide decisions concerning facilities and infrastructure. In response, we added additional details of NNSA's decision making processes for facilities and infrastructure (see p. 12). Additionally, NNSA noted that its shortfall in required inspections occurs primarily in facilities that are not critical to the SSP mission. We believe that our report adequately reflects this. We also note that over 1,000 facilities identified by NNSA as not critical—such as waste management facilities and machine shops—play important supporting roles in the SSP mission and can, by NNSA's own definition, disrupt operations if they are non-functional for more than 5 business days. Over 150 of these facilities have an inspection date outside of the required 5-year inspection period or no inspection date recorded. Finally, NNSA provided us with updated data from its FIMS database to show that additional inspections of facilities were conducted since the time of our analysis. We noted this updated data in our report, but did not independently verify the analysis NNSA conducted (see p. 11). NNSA also provided other additional technical information, which we incorporated where appropriate.

NNSA's letter also described a number of broader management initiatives that, when fully implemented, could enhance the agency's enterprise decision making. While we are encouraged that NNSA is taking these steps, it is unclear whether the actions identified in the agency's response would address the current shortfalls we identified in the data on infrastructure, capital improvement projects, shared use of facilities, and critical human capital skills. We continue to believe that our recommendations would provide decision makers with an increased

enterprisewide knowledge that would be beneficial to understand the potential impact of programmatic decisions.

If you or your staff have questions about this report, please contact me at (202) 512-3841 or aloiseg@gao.gov. Contact points for our Office of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report are listed in appendix IV.

A handwritten signature in black ink that reads "Gene Aloise". The signature is written in a cursive style with a large, looped "G" and a distinct "A".

Gene Aloise
Director, Natural Resources and Environment

Appendix I: Scope and Methodology

In conducting our work, we reviewed National Nuclear Security Administration (NNSA) documents and directives, including the 2010 *Nuclear Posture Review* and the *FY 2011 Stockpile Stewardship and Management Plan*; met with Department of Energy (DOE), NNSA, and contractor officials; assessed the reliability of the data provided; and visited four of the eight enterprise sites. Specifically, to determine the condition of nuclear weapons facilities, we reviewed management and operation (M&O) contractor's 10-year site plans for each enterprise site, and we obtained and analyzed data from DOE's Facilities Information Management System (FIMS). DOE extracted data from FIMS in April 2010, for all facilities and other structures identified within the database as supporting NNSA's nuclear weapon program. As a DOE directive requires inspection of facilities at least once every 5 years, we further limited our review to those facilities and other structures built prior to April 2005. Further, we limited our review to facilities and other structures identified within FIMS as being in current operational status. We worked with DOE and NNSA to ensure the data provided to us, current as of April 2010, met these criteria. Based on our analysis of this FIMS data, we determined that data needed to evaluate condition are incomplete, possibly out of date, and inconsistent across the sites. As a result, we do not believe they are sufficiently reliable for presenting current property condition. In response to our draft report, NNSA provided us with its own analysis of facility condition based on more recent FIMS data. We did not, however, independently verify the analysis, the results of which are noted on p. 11. We did not independently verify the agency's analysis of the data. We toured a nonrandom sample of facilities at the Los Alamos and Sandia National Laboratories in New Mexico, the Pantex Plant in Texas, and the Nevada National Security Site. In selecting our site visit locations, we considered a number of factors, including the type of site (production, laboratory, or test), missions carried out at the sites, the potential for shared use facilities, and geographic location. The data we obtained from our site visits are used as examples and cannot be generalized to indicate condition throughout the nuclear security enterprise. To determine NNSA's plans for improvements to enterprise infrastructure, NNSA identified all ongoing capital improvement projects and provided us with data for these projects. We did not independently confirm or evaluate the agency's data. To determine the extent to which NNSA has identified shared use facilities within the enterprise and how these facilities are managed, we reviewed NNSA's 2009 facility governance directive and met with NNSA, Los Alamos, and Sandia officials to discuss shared use facilities. We also collected and reviewed governance documents for several facilities that site officials identified to us as shared use assets. To determine NNSA's efforts to maintain the critical human capital skills of

the Stockpile Stewardship Program (SSP), we reviewed NNSA's *Development of the NNSA Critical/Capability Inventory* draft report and the *Report of the Commission on Maintaining United States Nuclear Weapons Expertise*. In addition, we met with human capital officials at NNSA, Pantex, the Nevada National Security Site, Los Alamos, and Sandia. We also reviewed NNSA's *Fiscal Year 2010 Enterprise Modeling Consortium Project Plan* to identify efforts undertaken by the agency to develop enterprisewide data and analysis tools.

We conducted this performance audit from January 2010 to February 2011 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Ongoing Capital Improvement Projects, as of September 2010

Project	Purpose	Status	Mission need approved	Estimated cost	Remaining funds needed for completion
Chemistry and Metallurgy Research (CMRR) Facility, Los Alamos	Replace the existing 1952 CMRR facility.	Estimated to be operational by 2022.	7/16/2002	^a	^a
Uranium Processing Facility (UPF), Y-12	Replace the existing highly enriched uranium processing capabilities.	Estimated to be operational by 2022.	12/17/2004	\$1.4 to \$3.5 billion	^a
Kansas City Responsive Infrastructure Manufacturing & Sourcing (KCRIMS)	Replace the existing facility for non-nuclear production.	Construction is estimated to begin in summer 2010.	12/28/2006	Direct cost- \$264 million Indirect cost- \$750 million ^b	Not applicable as project is third-party financed
Criticality Experiments Facility, Nevada Test Site	Provide a base criticality experiments capability. For example, it will provide training for criticality safety professionals and fissile materials handlers.	Completion estimated in second quarter fiscal year 2011.	8/3/2002	\$150.5 million	0
High Explosive Pressing Facility (HEPF), Pantex ^c	Provide a new high explosive main charge pressing facility.	Completion estimated in September 2016.	8/8/2008	\$146 million	\$136 million
TA-55 Reinvestment Phase II, Los Alamos	Refurbish air dryers; seismic bracing of gloveboxes; replace power supply, confinement doors, criticality alarms, water tank, and exhaust stack.	Design phase	3/23/2005	\$78.4 to 99.7 million	^a
Transuranic Waste Facility, Los Alamos	Support handling of newly generated TRU waste.	Requirements and scope under development	2/2006	Less than \$100 million	^a
Nuclear Facility Risk Reduction, Y-12	Continue operation of existing facilities until UPF is operational.	Design phase	11/1/2008	\$44.5 to 77.9 million	^a
Test Capabilities Revitalization Project Phase 2, Sandia	Modernize existing experimental and test capabilities.	Project proceeding with a low level of activity.	6/2/2001	\$52.7 million	\$25.2 million
Fire Stations Number 1 and 2, Nevada Test Site	Provide two new fire stations.	Completion is expected in fiscal year 2011.	12/6/2004	\$46.2 million	0
Ion Beam Laboratory, Sandia	Replace existing facility and provide standalone capability for use of accelerated ions.	Completion is expected in April 2012.	2007	\$39.6 million	^a

**Appendix II: Ongoing Capital Improvement
Projects, as of September 2010**

Project	Purpose	Status	Mission need approved	Estimated cost	Remaining funds needed for completion
Beryllium Capability Project, Y-12	Provide the capability to maintain existing components.	Completion expected in October 2010.	5/22/2000	\$36.1 million	0
High Pressure Fire Loop Zone 12, Pantex	Replace fire protection piping and install cathodic protection to prevent corrosion.	Completion expected in mid fiscal year 2011.	9/15/2004	\$35 million	0
TA-55 Reinvestment, Phase I, Los Alamos	Replace cooling towers and chiller equipment at LANL's research and development facilities.	Completed June 2010.	3/23/2005	\$24.5 million	0
Radioactive Liquid Waste Treatment Facility (RLW), Los Alamos	Upgrade the facility in order to comply with current codes and standards.	Preliminary design phase	10/24/2004	^a	^a

Source: Data obtained from NNSA, September 22, 2010.

Note: The mission need approved date signifies that NNSA validated that the project will address an identified need and that the project is consistent with congressional direction, administrative initiatives, and the agency's strategic plan.

^aTo be determined.

^bThe direct cost for KCRIMS includes funding for relocation and occupation of a leased facility, while indirect cost represents the estimated cost for a developer to construct the new, leased facility. Officials report the Kansas City Plant will recover the cost of the lease through overhead during a 20-year lease period.

^cAn NNSA official stated that the Pantex project was delayed for about a year so that a study could be conducted to determine if this capability could be outsourced. The results of the report are still in draft, but officials told us the conclusion was that the capability could not be outsourced. As a result of the delay, Pantex revised the baseline for the costs of the project and the U.S. Army Corps of Engineers are currently planning to award a construction contract in May 2011.

Appendix III: Comments from the Department of Energy



Department of Energy
National Nuclear Security Administration
Washington, DC 20585

January 28, 2011



Mr. Gene Aloise
Director
Natural Resources and Environment
Government Accountability Office
Washington, DC 20458

Dear Mr. Aloise:

The National Nuclear Security Administration (NNSA) appreciates the opportunity to review the Government Accountability Office's (GAO) report, *NUCLEAR WEAPONS: NNSA Needs More Comprehensive Infrastructure and Workforce Data to Improve Enterprise Decision-Making*, GAO-11-188. In response to a Congressional mandate, GAO performed a review on NNSA's Stockpile Stewardship Program to determine the extent to which NNSA has the data necessary to make informed, enterprise-wide decisions, particularly data on the condition of infrastructure, capital improvement projects, shared use of facilities, and critical human capital skills.

NNSA recognizes the need for improvements in these areas and for some time we have been working diligently to enhance the Stockpile Stewardship Program. The Nuclear Posture Review states that in order to sustain a safe, secure, and effective nuclear stockpile, the United States must possess a modern physical infrastructure and a highly capable workforce with the specialized skills needed to sustain the nuclear deterrent and support the President's nuclear security agenda. NNSA's Complex Transformation vision is for a smaller, safer, more secure and less expensive nuclear weapons complex that leverages the scientific and technical capabilities of our workforce and meets national security requirements.

Essentially, NNSA understands and can implement the report's recommendations. For example, NNSA is already implementing a series of enhancements to its Planning, Programming, Budgeting, and Execution (PPBE) processes, its Corporate Performance Evaluation Process (CPEP), and management information system capabilities for Defense Programs. In the first phase of the PPBE process improvements, the programming phase is being strengthened, and the CPEP and PPBE processes are being better integrated. In the first phase of the management information systems improvements, NNSA is piloting the deployment of a reporting tool using a Work Breakdown Structure to identify, in greater detail, the tasks required to execute the various elements of the mission and identify its associated cost. In addition, Defense Programs has instituted the Predictive Capability Framework and Component Maturation Framework program planning



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methodologies. These tools provide roadmaps that organize, schedule and link key science, technology and Directed Stockpile Work activities that are required to maintain the stockpile greatly enhancing the ability to project out year infrastructure resource requirements.

In addition, NNSA has a variety of programs that focus on retention and recruitment that have been in existence for several years, but will be modified to be compliant with the Pathways Program recently established by President Obama. Just recently the Office of Defense Programs created an Office of Corporate Talent and Critical Skills which will be responsible in providing management visibility into the overall state of the federal and contractor workforce talent and capabilities and to secure assurances that appropriate action is being taken as needed to shore up known areas of weakness or to close skill gaps. NNSA also sponsors important academic outreach programs that provide a strong linkage to the fundamental source of talent required by the Stockpile Stewardship and Management activities.

We are concerned, however, that the report provides an incomplete picture of how NNSA makes enterprise-wide decisions concerning facilities and infrastructure, and does not note that the report's April snapshot of Facility Information Management System (FIMS) data did not consider inspections completed but not reported until the end of the year. Under separate cover we will provide GAO with the spreadsheet that is an end of year snapshot that demonstrates the overwhelming number of uninspected or late inspected facilities to be Non-Mission Dependent "Other Structures and Facilities"—i.e., not essential to mission, buildings or trailers. We believe the report would be more accurate if GAO used this data rather than the April snapshot and specifically called attention to the differences between the inspection data for mission-related facilities and facilities not essential to mission.

We recommend that the report include a more complete description of the data on which NNSA makes enterprise-wide decisions concerning facilities and infrastructure. While FIMS data is useful for some purposes, as the report notes, the FIMS inspection frequency doesn't provide a sufficiently complete or up-to-date understanding for decisions. We recommend that the following paragraph be added to the report on page 9 as the second paragraph of the section titled *Facilities and Infrastructure Data*:

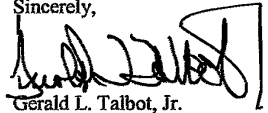
"NNSA decision makers fully understand the limitations of FIMS data and know that conditions change more rapidly than can be tracked by five year assessments. NNSA's PPBE process is informed by the aggressive oversight of Site offices as well as the budget requests from the several Management and Operating contractors, both of which are informed in real time by 'eyes on' observations of known and developing facility conditions. NNSA will continue to draw upon this insight as part of its improved PPBE process. Additionally, as the nuclear weapons complex grows smaller and is streamlined to match the anticipated reduced future stockpiles its decision processes focus more broadly on sustaining capabilities rather than specific facilities and structures, allowing some facilities to be run with increasing

3

deferred maintenance and then dispositioned rather than repaired. While the Ten Year Site Plans and FIMS provide some data used in the initial identification of some problems to be solved, the real time understanding and prioritization of the work necessary to sustain critical capabilities comes from the PPBE process, supporting venues such as the NNSA Construction Working Group, and daily dialogue with federal and contractor personnel at the Sites."

If you have any questions concerning this response, please contact JoAnne Parker, Director, Office of Internal Controls, at 202-586-1913.

Sincerely,

A handwritten signature in black ink, appearing to read "Gerald L. Talbot, Jr.", enclosed within a rectangular box.

Gerald L. Talbot, Jr.
Associate Administrator
for Management and Administration

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

Gene Aloise (202) 512-3841 or aloisee@gao.gov

Staff Acknowledgments

In addition to the individual named above, Jonathan Gill, Assistant Director; David Holt; Jonathan Kucskar; Alison O'Neill, Steven Putansu; Jeremy Sebest; Rebecca Shea; and Jay Spaan made significant contributions to this report.

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