



January 2019

NATIONAL NUCLEAR SECURITY ADMINISTRATION

Additional Actions Needed to Collect Common Financial Data

Accessible Version

GAO Highlights

Highlights of [GAO-19-101](#), a report to congressional committees

Why GAO Did This Study

GAO has identified challenges in determining and comparing costs across NNSA's eight sites. Congress needs this information to carry out its oversight responsibilities and make budgetary decisions. The National Defense Authorization Act for Fiscal Year 2017 required NNSA to implement a common financial reporting system across all sites. Separately, in 2013, NNSA awarded a single M&O contract for the Y-12 and Pantex sites, which included a requirement to consolidate the two sites' business systems.

An explanatory statement accompanying the act included a provision for GAO to review the agency's progress. This report examines (1) the status of the effort to consolidate the business systems at Y-12 and Pantex and the extent to which CNS and NNSA followed guidance and leading practices, and (2) the steps NNSA has taken in implementing common financial reporting across all eight sites and the extent to which this effort follows leading practices. GAO reviewed documentation for both efforts and compared it with leading practices, and interviewed NNSA officials and M&O contractors.

What GAO Recommends

GAO is making seven recommendations, including that NNSA should implement a common work breakdown structure and should follow leading practices to collect and document requirements to define project scope. NNSA generally agreed with six recommendations and neither agreed nor disagreed with one. GAO maintains that the recommendations are valid.

View [GAO-19-101](#). For more information, contact Allison Bawden at (202) 512-3841 or bawdena@gao.gov.

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What GAO Found

The National Nuclear Security Administration (NNSA)—a semiautonomous agency within the Department of Energy (DOE)—and Consolidated Nuclear Security, LLC (CNS)—the management and operating (M&O) contractor for the Y-12 National Security Complex (Y-12) in Tennessee and the Pantex Plant (Pantex) in Texas—implemented a consolidated business system for the two sites. CNS, NNSA, and DOE generally followed DOE guidance as well as leading project management and information technology investment practices for three areas of project management that may be useful in identifying problems that can arise after a system is implemented. Specifically, they (1) developed required plans and documents to support critical decisions on information technology projects, (2) generally followed leading practices for risk management, and (3) initiated a review by the investment review board during the system's operations and maintenance phase.

With regard to NNSA's broader effort to implement common financial reporting across its eight sites, GAO found that NNSA's progress on seven key implementation steps has varied (see table). For example, NNSA is not pursuing an important step to implement a common work breakdown structure—a method of dividing a project into successive levels of detail—as required by the National Defense Authorization Act for Fiscal Year 2017 (the act). All of NNSA's program offices had not accepted a common work breakdown structure, in part because program office leaders do not agree one is needed. According to GAO leading practices, not doing so causes difficulty in comparing costs across programs and contractors, which is the purpose of common financial reporting. Without pursuing this approach, the effort may not result in reliable, enterprise-wide financial data that meets the needs of Congress and improves NNSA's ability to report the total costs of its programs.

NNSA Progress toward Implementing Common Financial Reporting, as of December 2018

Steps	Progress
Identify an approach and develop a tool	Completed
Develop a policy	Not yet completed
Establish common cost elements and definitions	Completed
Identify and report costs for programs of record and base capabilities	Not yet completed
Implement a common work breakdown structure	Not pursuing
Collect financial data from M&O contractors	Not yet completed
Publish and analyze data	Not yet completed

Source: GAO analysis of NNSA documents and interviews with NNSA officials. | GAO-19-101

In addition, NNSA generally has not followed six project management leading practices, including one that emphasizes the importance of collecting and documenting stakeholder requirements to define project scope. NNSA officials said the act included the basic requirements and project scope, and therefore stakeholders only needed to provide input on how to meet requirements in the act rather than identify their own; this input was not documented. However, the act did not provide specific or detailed requirements. Without collecting and documenting stakeholder requirements, NNSA will not have assurances that data will meet stakeholder needs, which could limit the effectiveness of the effort.

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Abbreviations

CNS	Consolidated Nuclear Security, LLC
CD	critical decisions
DOE	Department of Energy
M&O	management and operating
NNSA	National Nuclear Security Administration
Pantex	Pantex Plant
PMI	Project Management Institute, Inc.
STARS	Standard Accounting and Reporting System
Y-12	Y-12 National Security Complex

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January 31, 2019

Congressional Committees

The National Nuclear Security Administration (NNSA)—a semiautonomous agency within the Department of Energy (DOE)—is responsible for, among other things, enhancing national security through the military application of nuclear energy; maintaining and modernizing infrastructure for the U.S. nuclear weapons stockpile; and supporting the nation’s nuclear nonproliferation efforts. To execute its missions, NNSA relies on management and operating (M&O) contracts—recognized as a special contracting method—to manage and operate its eight laboratory, production plant, and testing sites, collectively known as the nuclear security enterprise.¹ Since 1990, DOE’s management of contracts and projects, including those executed by NNSA, has been on our list of areas at high risk for fraud, waste, abuse, and mismanagement.² We have emphasized the importance of effective management and oversight of the contracts, projects, and programs that support NNSA’s mission, which are dependent upon the availability of reliable, enterprise-wide cost information. This information is needed to, among other things, identify the costs of activities, and ensure the validity of NNSA’s cost estimates for the agency. According to officials from NNSA’s Office of Management and Budget, NNSA obligated \$14.5 billion in 2018, over \$12 billion of which was obligated for M&O contracts.

As we have previously found, NNSA and Congress have had difficulty determining and comparing costs across its programs and contractors for nuclear security enterprise sites because each contractor uses different methods of accounting for and tracking costs.³ In June 2010, we found that NNSA could not accurately identify the total costs to operate and maintain weapons facilities and infrastructure because of differences in

¹50 U.S.C. § 2501.

²GAO, *High-Risk Series: Progress on Many High-Risk Areas, While Substantial Efforts Needed on Others*, [GAO-17-317](#) (Washington, D.C.: Feb. 15, 2017).

³See, for example, GAO, *Department of Energy: Additional Opportunities Exist for Reducing Laboratory Contractors’ Support Costs*, [GAO-05-897](#) (Washington, D.C.: Sept. 9, 2005) and 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).

contractors' cost accounting practices.⁴ Specifically, our analysis showed that the total cost to operate and maintain weapons facilities and infrastructure likely significantly exceeded the budget request submitted to Congress for that purpose in fiscal year 2009.⁵ In that report, we recommended that NNSA develop guidance for contractors to consistently collect information on the total costs to operate and maintain weapons activities facilities, as well as other programs and capabilities. In response to our recommendation, NNSA developed a tool to collect more consistent cost information. In June 2013, however, we found that NNSA was uncertain how it would use the data gathered by its new cost collection tool because the data collected were reported at an aggregate level and were not useful for comparing detailed costs across contractors.⁶ In that report, we recommended, among other things, that NNSA clarify the uses for the data gathered through its cost collection tool. Although NNSA agreed with our recommendation, NNSA officials have since concluded that the cost collection tool is not capable of providing enterprise-wide information.

Because the cost of activities at different NNSA sites cannot be easily compared and analyzed, it can be challenging for Congress to determine if NNSA is operating the nuclear security enterprise in an efficient, cost-effective manner and thereby provide effective oversight. To address this issue, the National Defense Authorization Act for Fiscal Year 2014 required NNSA to develop and submit to Congress by December 26, 2014, a plan for improving and integrating financial management of the nuclear security enterprise.⁷ On February 8, 2016, NNSA submitted its plan.⁸ In January 2017, we found that the plan did not provide the

⁴[GAO-10-582](#).

⁵In fiscal year 2009, the Readiness in Technical Base and Facilities program was responsible for supporting the underlying physical infrastructure for nuclear weapons mission activities in the nuclear security enterprise and ensuring the operational readiness of that infrastructure.

⁶GAO, *National Nuclear Security Administration: Laboratories' Indirect Cost Management Has Improved, but Additional Opportunities Exist*, [GAO-13-534](#) (Washington, D.C.: June 28, 2013).

⁷National Defense Authorization Act for Fiscal Year 2014, Pub. L. No. 113-66, div. C, title XXXI, subtitle B, § 3128, 127 Stat. 672, 1065-66 (2013).

⁸NNSA, *Plan for Improvement and Integration of Financial Management of the Nuclear Security Enterprise*, (Washington, D.C.: January 2016). The plan was dated January 2016, but it was not delivered to congressional committees until February 8, 2016.

framework needed to guide NNSA's effort to improve and integrate financial management of the nuclear security enterprise because it did not incorporate leading planning practices.⁹ We recommended that NNSA produce a plan consistent with these practices—such as defining the goals of the effort, describing the resources needed to meet goals, and involving stakeholders; however, NNSA has not addressed our recommendation. Subsequently, the National Defense Authorization Act for Fiscal Year 2017 required NNSA to implement common financial reporting for the nuclear security enterprise by December 23, 2020.¹⁰

Apart from this enterprise-wide effort, in January 2013, NNSA awarded a single M&O contract to Consolidated Nuclear Security, LLC (CNS) for two of NNSA's major production sites that contribute to the maintenance of nuclear weapons and production of their components—the Y-12 National Security Complex (Y-12) in Tennessee and the Pantex Plant (Pantex) in Texas.¹¹ These two sites were previously managed and operated under separate M&O contracts. CNS began performance under the single M&O contract in July 2014. In its NNSA-approved plan to merge the two sites, CNS stated it would implement a single business system for the two sites in fiscal year 2016. This system was to, among other things, consolidate redundant systems at the two sites, and help track cost savings, which are required for CNS to obtain contract extensions.¹² For example, to be awarded a 2-year contract extension, CNS would need to achieve at least 80 percent of the cost savings it had proposed to achieve by the end of contract year 3, among other things. Under a DOE directive, NNSA

⁹GAO, *National Nuclear Security Administration: A Plan Incorporating Leading Practices Is Needed to Guide Cost Reporting Improvement Effort*, [GAO-17-141](#) (Washington, D.C.: Jan. 19, 2017).

¹⁰National Defense Authorization Act for Fiscal Year 2017, Pub. L. No. 114-328, § 3113, 130 Stat. 2000, 2757 (2016).

¹¹NNSA first awarded the consolidated M&O contract in January 2013. However, NNSA's award of this contract was the subject of three protests to GAO under our bid protest authority. These challenges were largely unsuccessful, and CNS assumed management of the M&O contract in July 2014.

¹²We reported in 2011 that NNSA expected the proposed consolidation of the M&O work at its Y-12 and Pantex Plants could increase efficiencies and save \$895 million in nominal dollars over 10 years. We found that a number of issues, including that NNSA lacked an accurate total cost baseline for ongoing activities, created uncertainty with respect to whether these benefits would be realized. See GAO, *Modernizing the Nuclear Security Enterprise: The National Nuclear Security Administration's Proposed Acquisition Strategy Needs Further Clarification and Assessment*. [GAO-11-848](#). (Washington, D.C.: Sept. 20, 2011).

oversees CNS's development of this system, which includes financial and other business elements, in part, through its review of documentation at five critical decision points—formal stage gates or transition points during an information technology project's lifecycle where a set of deliverables, known as critical decision packages, are evaluated by approvers to ensure they were properly and fully completed.

The Senate report accompanying the National Defense Authorization Act for Fiscal Year 2018 included a provision for us to conduct reviews of the progress of NNSA's financial integration efforts and the implementation of common financial reporting through 2022. This is the first of those reviews. The provision also included language for us to review the efforts to integrate the business systems at Y-12 and Pantex as part of our first review. This report evaluates (1) the status of CNS's effort to consolidate the business systems for the Y-12 and Pantex sites and the extent to which CNS and NNSA followed federal guidance and leading practices in this effort, and (2) the steps NNSA has taken in planning and implementing common financial reporting across the nuclear security enterprise and the extent to which this effort follows leading practices for project management.

To evaluate the status of CNS's effort to consolidate business systems at Y-12 and Pantex and the extent to which CNS and NNSA followed federal guidance and leading practices, we focused on three key areas—critical decision packages, risk management, and investment review oversight. We focused on these areas based on prior GAO work, Project Management Institute, Inc. (PMI) leading practices,¹³ and DOE guidance that identified these areas as useful in helping to identify problems throughout the system's life cycle, including the operations and maintenance phase—the phase this system moved into early in our

¹³Project Management Institute, Inc., *Practice Standard for Project Risk Management*, Fourth Edition, 2009. The Project Management Institute (PMI) is a not-for-profit association that provides global standards for, among other things, project and program management. Five leading PMI practices for risk management that we assessed are (1) plan risk management, (2) identify risks, (3) perform risk analysis, (4) plan risk responses, and (5) monitor and control risks. The DOE guide cites the PMI as a source for its methods and principles.

review.¹⁴ To determine the extent to which CNS and NNSA followed DOE guidance and leading practices for critical decision packages, we reviewed DOE's *Information Technology Project Execution Model Guide*, which outlines the documents identified as required for each of the five critical decision milestones, or formal gates during an information system's life cycle.¹⁵ The purpose of the guide is to provide IT project managers with guidance that may be useful to them in effectively and efficiently implementing the directives of DOE Order 415.1, *Information Technology Project Management*.¹⁶ The guide lists certain documents that must be included in each critical decision package. We reviewed the documentation developed for the five CNS critical decision packages to determine if they had the documents that the guide describes as required. We also identified information CNS included in its packages that the guide described as essential or best practice.¹⁷ To determine the extent to which CNS and NNSA followed leading practices on risk management, we reviewed CNS's risk management documents, including the risk management plan and the risk register,¹⁸ to determine if CNS followed five leading practices for risk management identified by PMI. To determine whether CNS and NNSA followed DOE guidance and leading practices for investment review, we reviewed DOE guidance on information technology planning¹⁹ and GAO's guide that identifies leading

¹⁴GAO, *Standards for Internal Control in the Federal Government*, (GAO-14-704G), September 2014; GAO, *Executive Guide: Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity*, (GAO-04-394G), March 2004; GAO, *Immigration Courts: Actions Needed to Reduce Case Backlog and Address Long-Standing Management and Operational Challenges*, (GAO-17-438), June 2017; GAO, *DOD Major Automated Information Systems: Adherence to Best Practices Is Needed to Better Manage and Oversee Business Programs*, GAO-18-326; Project Management Institute, Inc., *Practice Standard for Project Risk Management*, Fourth Edition, 2009; DOE's Office of the Chief Information Officer, *Information Technology Project Execution Model Guide*; DOE G 415.1-1, July 7, 2014; DOE, Office of the Chief Information Officer, *U.S. Department of Energy Guide to IT Capital Planning*, (Washington, D.C.: March 2017).

¹⁵DOE, *Information Technology Project Execution Model Guide*, DOE G 415.1-1, July 17, 2014.

¹⁶DOE, *Information Technology Project Management*, DOE Order 415.1, Jan. 13, 2017.

¹⁷We did not evaluate the sufficiency of the content of these documents.

¹⁸A risk register is a tool used in project management to identify potential risks to a project. The risk register includes information about each identified risk, such as the nature of the risk, level of risk, who owns the risk, and the risk response.

¹⁹DOE's Office of the Chief Information Officer, *U.S. Department of Energy Guide to IT Capital Planning*, March 2017.

practices for managing technology investments.²⁰ We compared the guidance and leading practice of oversight by an agency investment review board throughout an investment's life cycle to DOE's oversight of the CNS business system to determine whether the agency had an investment review board overseeing the investment. Finally, we interviewed CNS, NNSA, and DOE officials, including officials from both the DOE and NNSA Offices of the Chief Information Officer and the NNSA Production Office, which is locally responsible for overseeing CNS, for information on the status of the effort as well as the extent to which federal guidance and leading practices were followed in our three areas of focus.²¹

To determine the steps NNSA has taken in planning and implementing common financial reporting across the nuclear security enterprise and the extent to which this effort follows leading practices for project management, we reviewed available project documentation, such as NNSA's annual reports to Congress from 2016, 2017, and 2018; meeting minutes and briefing slides from meetings held with senior leadership; and NNSA's draft financial integration policy. In addition, we interviewed NNSA officials including the program director for financial integration and officials from all of the NNSA program offices that had participated in the common financial reporting effort: Defense Programs; Defense Nuclear Nonproliferation; Emergency Operations; Safety, Infrastructure, and Operations; Defense Nuclear Security; and Counterterrorism and Counterproliferation. We also interviewed officials from NNSA's seven M&O contractors, DOE's Office of the Chief Financial Officer, NNSA's Office of Management and Budget, NNSA's Office of Cost Estimating and Program Evaluation, and DOE's and NNSA's Offices of the Chief Information Officer. Based on the documentation and interviews, we identified seven steps related to NNSA's efforts to implement common financial reporting. We also compared NNSA's efforts to plan and implement common financial reporting to requirements in section 3113 of the National Defense Authorization Act for Fiscal Year 2017 and GAO's *Cost Estimating and Assessment Guide*, which contains an applicable

²⁰GAO, *Executive Guide: Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity*, [GAO-04-394G](#) (Washington, D.C.: March 2004).

²¹NNSA opened the NNSA Production Office to administer NNSA contracts and direct and oversee CNS, responsibilities at Y-12 and Pantex that NNSA field offices typically have for each NNSA site. The NNSA Production Office was established in place of separate field offices for the two sites and is located in Oak Ridge, Tennessee.

section on developing a work breakdown structure.²² We compared NNSA's effort to plan and implement common financial reporting to the six leading project management practices identified by PMI that we determined were most relevant to the planning and implementation of financial management projects (according to NNSA officials, this effort is considered a project).²³ We consider PMI's project management practices to be a relevant summary of leading project management practices for NNSA and financial management projects, such as common financial reporting. Further, DOE references leading practices from PMI in a variety of its guidance documents pertaining to project management.

We conducted this performance audit from January 2018 to January 2019 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

This section provides an overview of (1) NNSA's missions and organization, (2) contract consolidation of management and operations for Y-12 and Pantex, (3) DOE's information technology project management process and CNS's consolidation of business systems, (4) cost accounting requirements and methods of accounting for and tracking costs, and (5) the statutory requirement for NNSA to plan and implement common financial reporting.

²²GAO, *Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, [GAO-09-3SP](#), (Washington, D.C.: March 2009). We used the cost estimating guide specifically for the described best practices of developing a work breakdown structure. A work breakdown structure is a method of deconstructing a program's end product into successive levels of detail with smaller specific elements until the work is subdivided to a level suitable for management control.

²³Project Management Institute, Inc., *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*, Sixth Edition, 2017. PMBOK is a trademark of Project Management Institute, Inc.

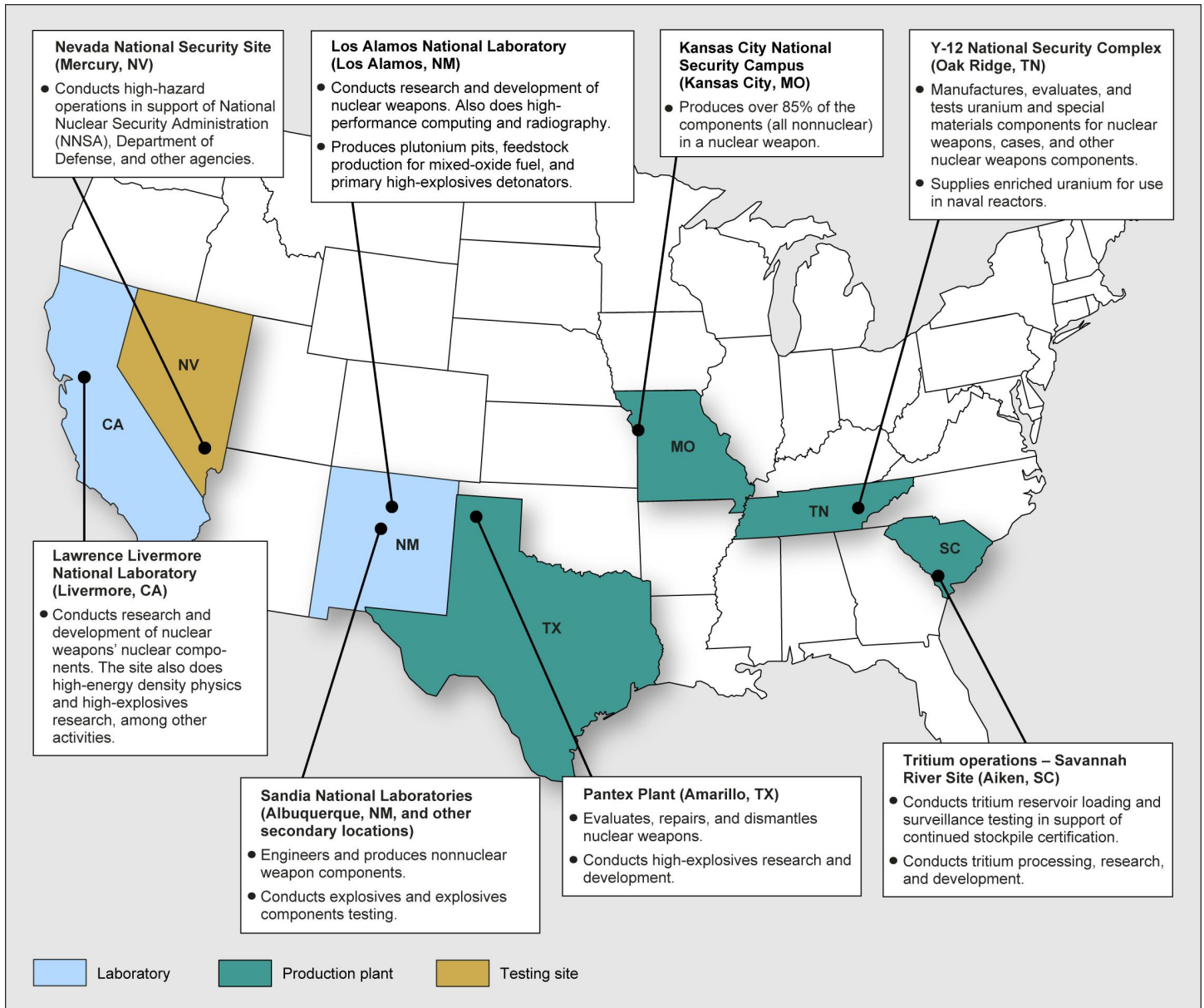
NNSA's Missions and Organization

NNSA's missions are largely executed at eight sites that comprise the nuclear security enterprise. These eight sites include three national security laboratories—Lawrence Livermore National Laboratory in California, Los Alamos National Laboratory in New Mexico, and Sandia National Laboratories in New Mexico and other locations; four nuclear weapons production plants—Pantex, Y-12, the Kansas City National Security Complex in Missouri, and tritium operations at DOE's Savannah River Site in South Carolina;²⁴ and the Nevada National Security Site, formerly known as the Nevada Test Site.²⁵ As shown in figure 1, each NNSA site has specific responsibilities within the nuclear security enterprise.

²⁴Tritium is a radioactive isotope of hydrogen used to enhance the power of U.S. nuclear weapons.

²⁵NNSA also relies on DOE and its contractors at other sites to accomplish its missions, but these sites are not considered part of the nuclear security enterprise. At this time, NNSA's common financial reporting efforts are focused solely on NNSA's eight sites.

Figure 1: NNSA National Security Laboratories, Production Plants, and Testing Sites



Sources: GAO presentation of NNSA information; Map Resources (map). | GAO-19-101

NNSA's sites are owned by the federal government but managed and operated by M&O contractors. According to DOE, the use of M&O contracts is supported by an underlying principle: the federal government employs highly capable companies and educational institutions to manage and operate government-owned or -controlled scientific,

engineering, and production facilities because these companies and educational institutions have greater flexibility in bringing scientific and technical skills to bear than the government. As we previously found, an M&O contract is characterized by, among other things, the close relationship between the government and the contractor for conducting work of a long-term and continuing nature.²⁶

To support its missions, NNSA is organized into program offices that oversee the agency's numerous programs, such as the B61-12 Life Extension Program²⁷—overseen by the Office of Defense Programs—and the Nuclear Smuggling Detection and Deterrence Program—overseen by the Office of Defense Nuclear Nonproliferation. These NNSA program offices are

- Defense Programs;
- Defense Nuclear Nonproliferation;
- Emergency Operations;
- Safety, Infrastructure, and Operations;
- Defense Nuclear Security;
- Counterterrorism and Counterproliferation; and
- Naval Reactors.²⁸

Mission-related activities are primarily overseen by these program offices, which are responsible for integrating the activities across the multiple sites performing work. NNSA field offices, co-located at the sites, oversee the day-to-day activities of the contractors as well as mission support functions, such as safety.

²⁶GAO, *National Nuclear Security Administration: Reports on the Benefits and Costs of Competing Management and Operating Contracts Need to Be Clearer and More Complete*, [GAO-15-331](#) (Washington, D.C.: Mar. 23, 2015).

²⁷B61 nuclear bombs are the oldest nuclear weapons in the United States' active stockpile and critical components of these bombs are approaching the end of their operational lives. To maintain the safety, security, and effectiveness of B61 bombs, NNSA and the Department of Defense are undertaking a life extension program that will result in a bomb known as the B61-12.

²⁸Within NNSA, the Office of Naval Reactors does not participate in the common financial reporting effort.

Contract Consolidation of Management and Operations for Y-12 and Pantex

Since the 1980s, we and others have identified issues with DOE's and NNSA's oversight of M&O contracts, particularly with respect to managing both costs and mission performance. In 2007, NNSA identified the consolidation of M&O contracts as a potential strategy to improve performance and reduce costs. NNSA planned for an integrated, interdependent nuclear security enterprise characterized by, among other things, fewer uniform contracts with multisite incentives (for example, an award fee that could be earned for improved collaboration among sites) and uniform business practices, technical processes, information management, and program and project management.²⁹ In 2010, NNSA decided to conduct a contract competition for a single M&O contract to consolidate management and operations at its Y-12 and Pantex sites.

In January 2013, NNSA awarded the consolidated management contract for Y-12 and Pantex to CNS, which assumed management of the sites in July 2014. CNS had proposed initiatives estimated to result in \$2.9 billion in total cumulative cost savings over the 10-year contract period. The M&O contract includes a provision that CNS maintain a single financial management system for Y-12 and Pantex, which, according to NNSA, would offer transparency and sufficient tracking of execution costs, supply chain, and benefit savings in validating any cost savings that result from the merger. At the time of the merger, Y-12 and Pantex used different systems for management of financial, human resources, supply chain, and other business information. According to CNS, the consolidation of business systems is essential to integrating the nuclear security enterprise, meeting the requirements in the contract, and achieving long-term NNSA goals for the contract. In addition to the single M&O contractor for the Y-12 and Pantex sites, NNSA opened the NNSA Production Office to carry out the responsibilities that NNSA field offices typically have for each NNSA site—to administer NNSA contracts and direct and oversee the contractors. NNSA established the NNSA Production Office in place of separate field offices for the two sites.

²⁹For example, see NNSA, *Complex 2030: An Infrastructure Planning Scenario for a Nuclear Weapons Complex Able to Meet the Threats of the 21st Century* (Washington, D.C.: Oct. 23, 2006).

DOE's Information Technology Project Management Process and CNS's Consolidation of Business Systems

NNSA is responsible for the oversight of CNS's implementation of a single business system for Y-12 and Pantex, as outlined in DOE Order 415.1, to ensure that information technology projects are delivered within their original performance baselines, costs, and schedules.³⁰ DOE also issued guidance in support of Order 415.1.³¹ The DOE guidance outlines the five critical decisions, or formal gates during a project's lifecycle, where a set of deliverables—critical decision packages—are evaluated by NNSA. Upon confirmation that the critical decision package has been successfully completed, the appropriate NNSA and CNS critical decision approvers can agree on advancing the project to the next critical decision milestone. The DOE guidance, CNS's project execution plan, NNSA's project team charter, and DOE's guide to information technology capital planning also set forth the oversight responsibilities of the project's federal project director, an integrated project team, and Investment Review Board, as discussed below.³²

- **Federal project director.** The federal project director for CNS's consolidation effort is responsible for providing federal oversight of the project, coordinating contract direction through the contracting officer, managing the critical decision approval process, monitoring the performance baseline, providing the single point-of-contact between federal staff and CNS for all project-related matters, leading the federal integrated project team, coordinating independent peer review, and filling federal staffing of the integrated project team. For this effort, the federal project director is an official with NNSA's Office of the Chief Information Officer.
- **Integrated project team.** An integrated project team is an interdisciplinary stakeholder group with the knowledge, skills, and abilities necessary to support and complement the decision-making process. An integrated project team assists the federal project director in assessing project performance and its members may serve as

³⁰DOE, *Information Technology Project Management*, DOE Order 415.1 (Washington, D.C.: Dec. 3, 2012).

³¹DOE, *Information Technology Project Execution Model Guide*, DOE Guide 415.1-1, (Washington, D.C.: July 7, 2014).

³²DOE, Office of the Chief Information Officer, *U.S. Department of Energy Guide to IT Capital Planning*, (Washington, D.C.: March 2017).

subject matter experts in their areas of responsibility for the full scope of the project. The purpose of the integrated project team for the CNS business system consolidation was to provide the federal project director with input, analysis, and decision support. For this effort, the integrated project team membership was largely composed of officials from the NNSA Production Office.

- **DOE investment review board.** The investment review board is chaired by DOE's Chief Information Officer or designee. The board provides a forum for deliberations about DOE's information technology and information resource investments needed to achieve the agency's mission needs and business requirements. The investment review board is convened to provide formal review and approval of information technology projects and to review every major information technology investment annually.

Cost Accounting Requirements and Methods of Accounting for and Tracking Costs

NNSA is subject to different cost accounting requirements than its seven M&O contractors. NNSA is required to follow Managerial Cost Accounting Standards.³³ The principal purpose of these standards is to determine the full cost of delivering a program or output to allow an organization to assess the reasonableness of this cost or to establish a baseline for comparison. The standard states that federal agencies should accumulate and report the costs of their activities on a regular basis for management information purposes and allow flexibility for agency managers to develop costing methods that are best suited to their operational environment. Such information is important to Congress and to NNSA managers as they make decisions about allocating federal resources, authorizing and modifying programs, and evaluating program performance. Separate standards—referred to as federal Cost Accounting Standards—govern how NNSA's M&O contractors structure and account for their costs.³⁴ Federal Cost Accounting Standards provide direction for the consistent and equitable distribution of a contractor's

³³The Statement of Federal Financial Accounting Standards No. 4, *Managerial Cost Accounting Standards and Concepts*, requires government agencies to determine and report the full costs of government goods and services, including direct and indirect costs.

³⁴The Cost Accounting Standards are a set of 19 standards promulgated by the U.S. Cost Accounting Standards Board, an independent and statutorily established board that is administratively part of the Office of Management and Budget's Office of Federal Procurement Policy. 41 U.S.C. § 1501. For current applicability, see 48 C.F.R. pt. 9904.

costs to help federal agencies more accurately determine the actual costs of their contracts and the contractor's costs associated with specific projects and programs.

To comply with federal Cost Accounting Standards, M&O contractors classify costs as either direct or indirect in order to allocate these costs to programs. Direct costs are assigned to the benefitting program or programs. Indirect costs—those costs that cannot be assigned to a particular program, such as costs for administration and site support—are to be accumulated, or grouped, into indirect cost pools. The contractor is to estimate the amount of indirect costs (accumulated into indirect cost pools) that will need to be distributed to each program and adjust the costs to actual costs by the end of the fiscal year. The contractor then is to distribute these costs based on a rate in accordance with the contractor's cost allocation model. The final program cost is the sum of the total direct costs plus the indirect costs distributed to the program.

In implementing these allocation methods, federal Cost Accounting Standards provide contractors with flexibility regarding the extent to which they identify incurred costs directly with a specific program and how they collect similar costs into indirect cost pools and allocate them among programs. Therefore, similar costs may be allocated differently because contractors' cost allocation models differ—that is, a cost classified as an indirect cost at one site may be classified as a direct cost at another.³⁵ However, because similar indirect costs can be allocated differently by each contractor and contractors may change the way they allocate indirect costs over time, it is difficult to compare contractor costs among sites and accurately calculate total program costs when a program is implemented through work at multiple sites.

The seven NNSA M&O contractors and NNSA's various program offices also track direct costs using programmatic work breakdown structures. A work breakdown structure is a method of deconstructing a program's end product into successive levels of detail with smaller specific elements until the work is subdivided to a level suitable for management control. Within work breakdown structures, cost elements capture discrete costs of a particular activity of work, such as labor, and materials. Best practices for developing work breakdown structures state that a work breakdown

³⁵Cost allocation models outline the contractor's structure for identifying and allocating indirect costs.

structure should include all activities that contribute to a program's end product, and not treat contributing activities separately.³⁶ We have previously found that each of NNSA's seven M&O contractors have historically developed their own work breakdown structures to manage and track costs for work at each site even when their work contributes to the same program.³⁷ These work breakdown structures have also generally differed from the ones NNSA program offices have developed to describe the scope of its programs. The use of different work breakdown structures by both M&O contractors and NNSA's program offices, combined with a budget structure that does not match the work breakdown structures, makes it difficult for NNSA and others to track and compare costs for analogous activities across programs, contractors, and sites. For example, in May 2018, we found that the \$7.6 billion cost estimate for NNSA's work on the B61-12 Life Extension Program did not include \$648 million in activities that were undertaken by other NNSA programs, such as research and development, test and evaluation activities, and infrastructure elements. We found those activities also were not included in the work breakdown structure for the B61-12.³⁸

Although differences are allowed in the way M&O contractors account for and track costs, these differences have made it challenging for NNSA to determine the full costs of its programs across different sites and contracts and collect managerially relevant cost information. In addition, we have previously found that NNSA's financial system of record does not satisfy the information needs of NNSA's program offices.³⁹ DOE and NNSA's financial management system—the Standard Accounting and Reporting System (STARS)—provides budget execution, financial accounting, and financial reporting for the department. STARS is also integrated with other agency systems for procurement, funds distribution, travel, and human resources. Due to the nature of an M&O contract resulting in the close relationship between an M&O contractor and the

³⁶Project Management Institute, Inc. *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*, Sixth Edition, 2017.

³⁷[GAO-17-141](#).

³⁸GAO, *B61-12 Nuclear Bomb: Cost Estimate for Life Extension Incorporated Best Practices, and Steps Being Taken to Manage Remaining Program Risks*, [GAO-18-456](#) (Washington, D.C.: May 31, 2018).

³⁹GAO, *Nuclear Weapons: Opportunities Exist to Improve the Budgeting, Cost Accounting, and Management Associated with the Stockpile Life Extension Program*, [GAO-03-583](#) (Washington, D.C.: July 28, 2003) and [GAO-10-582](#).

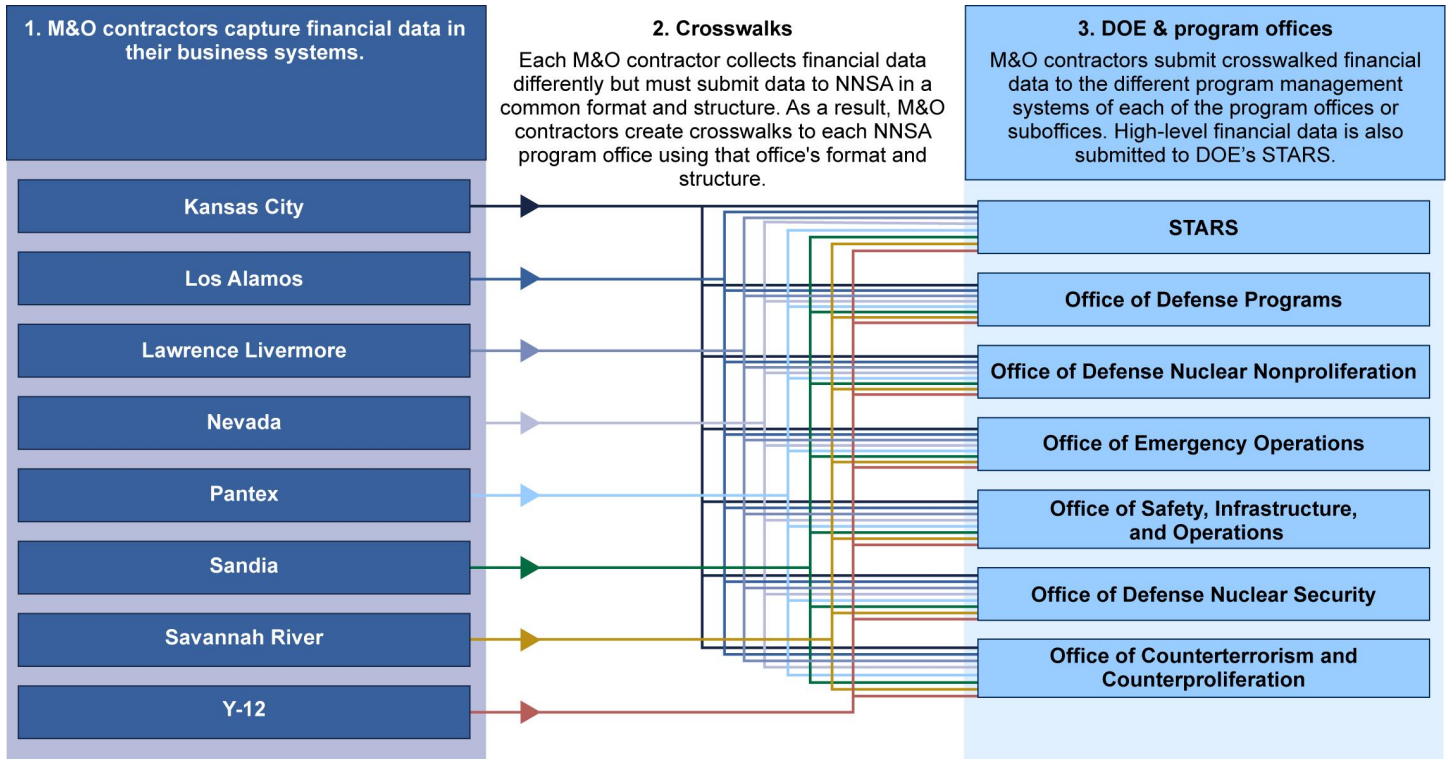
agency, the M&O contractors' financial systems must be able to directly provide cost reports to NNSA's financial management system. The primary source of cost data contained in STARS comes from summary level cost reports provided by M&O contractors. STARS cost data are accessible to program offices through an integrated data warehouse feature. However, financial data collected through STARS are not sufficiently detailed and therefore, do not satisfy the information needs of NNSA's program offices.

In the absence of a managerial cost accounting system that pulls data from financial systems and relevant operating systems in order to consistently and uniformly produce managerially relevant cost information, NNSA's program offices have developed various systems, tools, and spreadsheets to track relevant cost information. Specifically, NNSA's program offices separately collect cost information from its M&O contractors that is more detailed than costs reported through STARS. Because these data do not come from DOE's official accounting records, however, financial data collected by NNSA's program offices must be reconciled with STARS to provide assurance that they are complete and reliable. Collecting these data requires M&O contractors to map, or "crosswalk," their cost data to the work breakdown structures of one or more of NNSA's program offices.

M&O contractors have historically constructed crosswalks from their own data so it can be submitted to the different NNSA program offices' and tracked against the program offices' work breakdown structures. Each NNSA program office uses different tools to house its work breakdown structure and track costs against it; and in some cases, a program office may use more than one tool across its programs. Some tools used by the program offices include program management systems or spreadsheets. The various tools were developed independently and have been modified to meet each program office's programmatic, budgetary, and project requirements. For example, in 2007, officials from the Office of Defense Nuclear Nonproliferation custom-developed the G2 program management system, designed to integrate and manage data, such as scope, schedule, budget, and cost at the program level. This system was refined to meet the needs of the Office of Defense Nuclear Nonproliferation and was later adopted by the Office of Safety, Infrastructure, and Operations. In the case of the Office of Safety, Infrastructure and Operations, M&O contractors have created a crosswalk from their own work breakdown structures to the program office's work breakdown structure and upload that crosswalked data into the G2 system on the tenth day of the month after the costs were incurred. This process allows M&O contractors to

report thousands of cost data elements to the Office of Safety, Infrastructure, and Operations every month. However, this process is different for each program office depending on the tool used and the information collected and is in addition to the financial reporting that M&O contractors provide for STARS (see fig. 2).

Figure 2: National Nuclear Security Administration’s (NNSA) Methods for Collecting Financial Data from Management and Operating (M&O) Contractors



Source: GAO presentation of information from NNSA documents and interviews. | GAO-19-101

Notes: M&O contractors are identified by their site location. The complete name of each location is as follows: Kansas City National Security Campus, Los Alamos National Laboratory, Lawrence Livermore National Laboratory, Nevada National Security Site, Pantex Plant, Sandia National Laboratories, Savannah River Site, and Y-12 National Security Complex.

The Standard Accounting and Reporting System (STARS) provides budget execution, financial accounting, and financial reporting for the U.S. Department of Energy (DOE).

Each NNSA program office may use more than one tool to collect cost data. For example, the Office of Safety, Infrastructure, and Operations uses both the G2 and WebPMIS program management systems.

DOE and NNSA have previously tried to improve their ability to oversee M&O contractors' costs and obtain better managerial cost information. For example, in 2010, DOE began implementation of Institutional Cost Reporting—a DOE-wide initiative to create a standardized report of

certain costs, including many indirect costs—to improve its ability to oversee its sites' costs. Specifically, Institutional Cost Reporting is a system to collect and report costs at an aggregate level across broad cost categories. However, in June 2013, we found that DOE officials determined that the Institutional Cost Reporting initiative data are aggregated at such a high level that they cannot be used to compare detailed contractor costs.⁴⁰

Statutory Requirement to Plan and Implement Common Financial Reporting

Section 3128 of the National Defense Authorization Act for Fiscal Year 2014, which addressed the long-standing issue described above, required NNSA to develop a plan for improving and integrating financial management of the nuclear security enterprise. The Joint Explanatory Statement accompanying the act stated that NNSA was to develop a plan for a common cost structure for activities at different sites with the purpose of comparing how efficiently different sites within the NNSA national security enterprise are carrying out similar activities. According to the act, matters to be included in the plan were: (1) an assessment of the feasibility of the plan, (2) the estimated costs of carrying out the plan, (3) an assessment of the expected results of the plan, and (4) a timeline for implementation of the plan.

In April 2014, to address the requirements of section 3128, NNSA formed a Lean Six Sigma team of 20 NNSA and M&O contractor staff, including members from the NNSA Office of Management and Budget; the Office of Safety, Infrastructure, and Operations; the Office of Defense Programs; and the DOE Office of the Chief Financial Officer.⁴¹ In December 2014, the team produced a report that summarized the results of the effort and included a number of recommendations to NNSA, such as the development of a common work breakdown structure across all program

⁴⁰[GAO-13-534](#).

⁴¹Lean Six Sigma is a data-driven approach used in the private sector and government for analyzing work processes based on the idea of eliminating defects and errors that contribute to losses of time, money, opportunities, or business.

offices, and the need for an “executive champion.”⁴² According to the Lean Six Sigma report, the executive champion would be responsible for defining and implementing the work breakdown structure recommendations and be an authoritative “buck stops here” official with a direct reporting line to the NNSA Administrator for the removal of roadblocks and accountability for successful implementation.

To carry out the statutory requirement to plan for common financial reporting, NNSA also established the position of program director of financial integration and first filled the position in January 2016. According to NNSA’s draft financial integration policy, the program director for financial integration is to manage and coordinate all NNSA activities to meet National Defense Authorization Act requirements, develop and maintain clear and consistent reporting requirements, analyze enterprise-wide financial data using leading business best practices, and monitor the effects of financial integration, among other responsibilities. The program director of financial integration reports to NNSA’s Office of Management and Budget and provides updates to a Financial Integration Executive Committee. The Executive Committee is chaired by the NNSA Associate Administrator for Management and Budget and includes senior leadership from NNSA program, field, and functional offices. The role of the Executive Committee is to monitor and provide strategic direction for the implementation of common financial reporting and approve significant changes to the effort.

In February 2016, NNSA produced a plan with the stated purpose of integrating and improving the financial management of the nuclear security enterprise.⁴³ The plan stated that common data collected through

⁴²*National Defense Authorization Act for Fiscal Year 2014, Section 3128 Financial Management Improvement Team Report.* (Washington, D.C.: December 2014). In recognition of similar cost data requirements, the team’s work also addressed requirements contained in a different section of the National Defense Authorization Act for Fiscal Year 2014. Specifically, section 3112 required the NNSA Administrator to establish a Director for Cost Estimation and Program Evaluation to serve as the principal advisor for cost estimation and program evaluation activities, including development of a cost data collection and reporting system for designated NNSA programs and projects. Therefore, according to the December 2014 report, the team focused on both the requirements of section 3128 and the development of a cost data collection and reporting system required by section 3112. According to NNSA officials, as efforts to implement section 3128 and section 3112 matured, NNSA concluded there is sufficient variation in the requirements to support separate but complimentary data approaches.

⁴³Department of Energy, National Nuclear Security Administration, *Plan for Improvement and Integration of Financial Management of the Nuclear Security Enterprise* (Washington, D.C.: Jan. 2016). The plan was submitted to Congress in February 2016.

the effort would be made available to program offices and field offices to provide efficiencies in reporting and budget planning, and reduce ad hoc data calls—requests for information from stakeholders, including Congress, NNSA program offices, and GAO. NNSA’s plan included the four elements required under section 3128—a feasibility assessment, estimated costs, expected results, and an implementation timeline—but we found that the plan contained few details related to each of these elements.⁴⁴ As such, we recommended that NNSA produce a plan consistent with leading planning practices; however, NNSA has not addressed our recommendation.

The National Defense Authorization Act for Fiscal Year 2017 required NNSA to implement, to the extent practicable, a common financial reporting system for the nuclear security enterprise by December 23, 2020. According to the act, the common financial reporting system is to include the following:

- (1) common data reporting requirements, including reporting of financial data by standardized labor categories, labor hours, functional elements, and cost elements;
- (2) a common work breakdown structure;
- (3) definitions and methodologies for identifying and reporting costs for programs of record and base capabilities; and
- (4) a capability to leverage the Department of Defense Office of Cost Assessment and Program Evaluation using historical costing data.⁴⁵

⁴⁴[GAO-17-141](#).

⁴⁵The mission of the Office of Cost Assessment and Program Evaluation is to provide the Department of Defense with timely, insightful, and unbiased analysis on resource allocation and cost estimation problems to deliver the optimum portfolio of military capabilities through efficient and effective use of each taxpayer dollar. The financial integration team and the Office of Defense Programs consulted with the Office of Cost Assessment and Program Evaluation and the program director for financial integration concluded that it would not be appropriate to use the Cost Assessment Data Enterprise, because their cost reporting requirements are not directly or sufficiently comparable.

The act also requires NNSA to submit an annual report to Congress that includes:

- (1) a summary of activities, accomplishments, challenges, benefits, and costs related to the implementation of a common financial reporting system;
- (2) a summary of planned activities; and
- (3) a description of any anticipated modifications to the schedule for implementing a common financial reporting system for the nuclear security enterprise, including an update on possible risks, challenges, and costs related to such implementation.⁴⁶

CNS and NNSA Implemented a Consolidated Business System for the Y-12 and Pantex Sites and Generally Followed Federal Guidance and Leading Practices

CNS and NNSA implemented a consolidated business system for Y-12 and Pantex that generally followed DOE guidance and leading practices established by PMI and GAO. In October 2017, CNS implemented the consolidated system, after beginning the Business System Modernization Project in May 2016. In implementing the consolidated system, CNS, NNSA, and DOE generally followed federal guidance and leading practices for information technology projects in three areas: critical milestones, risk management, and investment review. We focused on these areas based on prior GAO work, PMI leading practices, and DOE guidance that identified these areas as useful in helping to identify problems throughout the system's life cycle, including the operations and

⁴⁶The report is due to congressional defense committees by March 1 of each year until the completion of a common financial reporting system. NNSA submitted annual reports to Congress in July 2017 and July 2018.

maintenance phase, the phase this system moved into early in our review.⁴⁷

CNS and NNSA Implemented the Consolidated CNS Business System

CNS implemented phase one—the Business System Modernization Project—of its multi-phased Enterprise Resource Planning consolidation for Y-12 and Pantex in October 2017, as planned.⁴⁸ The Enterprise Resource Planning consolidation is considered a major investment requiring additional DOE and NNSA oversight.⁴⁹ Through the Enterprise Resource Planning consolidation, CNS is planning several projects with discrete requirements, costs, and schedules, with the goal of providing one consolidated system at the two sites by 2020. The first phase, referred to as the Business System Modernization Project, resulted in a consolidated business system for the two sites, including a consolidated financial, human resource, and supply chain system. The second phase is intended to enhance the new consolidated business system by, among other things, improving and integrating existing processes within the areas of finance, supply chain management process, and human resources. Future projects will include modernization of training,

⁴⁷GAO, *Standards for Internal Control in the Federal Government*, (GAO-14-704G), September 2014; Government GAO, *Executive Guide: Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity*, (GAO-04-394G), March 2004; GAO, *Immigration Courts: Actions Needed to Reduce Case Backlog and Address Long-Standing Management and Operational Challenges*, (GAO-17-438), June 2017; Project Management Institute, Inc. *Practice Standard for Project Risk Management*, 2009; DOE's Office of the Chief Information Officer, *Information Technology Project Execution Model Guide*; DOE G 415.1-1, July 7, 2014; DOE, Office of the Chief Information Officer, *U.S. Department of Energy Guide to IT Capital Planning*, (Washington, D.C.: March 2017).

⁴⁸An enterprise resource planning system is an automated system using commercial off-the-shelf software consisting of multiple, integrated functional modules that perform a variety of business-related tasks such as general ledger accounting, payroll, and supply chain management.

⁴⁹A major information technology investment is a system or an acquisition that requires special management attention because it has significant importance to the mission or function of the government; significant program or policy implications; high executive visibility; high development, operating, or maintenance costs; an unusual funding mechanism; or is defined as major by the agency's capital planning and investment control process. The Office of Management and Budget's public website, called the IT Dashboard, provides detailed information on major information technology investments at 26 federal agencies. See <https://itdashboard.gov/>.

engineering, and manufacturing systems, according to CNS project documents.

After the merger of Y-12 and Pantex in July 2014, the contractor used various systems at the two sites to perform critical functions, such as budget planning and execution, payroll, and procurement, in an inefficient manner due to inconsistencies in the sites' functional operations, according to a CNS project document. According to the document, some systems also relied on manual and labor-intensive processes to generate required reports, such as consolidated financial statements. An August 2015 CNS letter to NNSA stated that CNS planned to postpone the selection of a consolidated business system until fiscal year 2018 so it could benchmark other systems across NNSA, identify the financial process requirements for the merger of the two sites, and evaluate product capabilities so it could select the best system. The letter stated that CNS planned to keep legacy systems operating at both sites and upload data from each site's system into a data warehouse to crosswalk the data and produce combined reporting. CNS officials believed this method met the intent of the NNSA-approved CNS Merger and Transformation Plan that stated CNS would implement a single business system for the two sites in fiscal year 2016. However, a September 2015 NNSA letter of reply stated that CNS's effort to maintain two systems and combine their results in a data warehouse was inefficient, uneconomical, unreliable, and lacking in internal controls. The letter further stated that CNS should have alerted NNSA when it decided to delay consolidation for 2 years since it was a significant deviation from the approved plan. NNSA recommended that CNS provide NNSA with a new plan to implement a single system by October 2015. In response to the NNSA letter, CNS hired a transformation lead in September 2015 and began reviewing how Y-12 and Pantex completed their site business processes and how other companies complete those processes, according to CNS officials. Once these reviews were completed, CNS used process improvement tools to review its business processes and propose and score solutions. In May 2016, CNS officially began the Business System Modernization Project with the goal of retiring certain legacy systems and consolidating business processes for Y-12 and Pantex into one system, consistent with NNSA's direction.

CNS project documents approved in July 2016 identified several goals for the consolidated system. One goal was that consolidation of financial, human resource, and supply chain management processes and systems would facilitate proactive rather than reactive management decisions. Prior to the consolidated system, managers waited a month for some

reports to be manually developed, which could delay identification of a problem, according to CNS officials. As a result of system implementation and the subsequent development of an analysis tool, the data for these areas are in one system; CNS and NNSA managers can use the analysis tool to access detailed data in real time. This enables managers to continuously track financial data and identify potential problems more quickly. For example, according to CNS officials, the new analysis tool can show planned versus actual progress toward annual cost savings targets. The CNS merger and transformation plan contains a commitment to achieve \$41.4 million in total fiscal year 2019 cost savings. If the tool shows that CNS managers are not meeting their annual targets—intended to help achieve the total savings—these managers can view additional detailed data to help them understand why they are not on track to meet their targets. NNSA managers can also view the data in their oversight capacity.⁵⁰

CNS identified additional goals for the consolidation, including removing barriers that hinder performance; eliminating legacy systems when feasible; and making business, human resource, financial, and supply chain management processes paperless to the maximum extent practicable and with information available on any device. CNS eliminated barriers that hindered performance, particularly at Pantex, when CNS implemented the consolidated system in October 2017, because some legacy paper systems and processes became automated, according to CNS officials. For example, manual processes that were automated include overhead calculation and distribution, employee shift changes, time collection, and data entry for STARS. CNS has retired the financial, human resources, time and attendance, and procurement applications that were part of the legacy enterprise resource planning system at Y-12, according to CNS officials. CNS has also retired the human resources and time and attendance applications that were part of the legacy Enterprise Resource Planning system at Pantex, as well as some financial and procurement applications that were part of that legacy system. CNS plans to retire the remainder of the legacy financial and procurement applications at Pantex in fiscal year 2019. CNS officials said they will continue to retire legacy systems as follow-on Enterprise Resource Planning consolidation projects are implemented. In response

⁵⁰We will be separately reviewing the reported cost savings from the merger of Y-12 and Pantex, consistent with the John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. No. 115-232, § 4807. See H. Conf. Rpt. 115-874 at 664 (2018) (Conf. Rep.).

to one goal, the new system allows users to access data on any device at any time.

CNS and NNSA officials stated that they met cost targets. CNS estimated that the project would have a total cost of about \$34 million from May 2016 through March 2018. Nearly half of the \$34 million was not new funding but was redirected from the operations and maintenance for the legacy systems and from functional areas (e.g., financial, human resources). CNS provided a final cost estimate of \$32 million for this period, which is below the original estimate.⁵¹

CNS, NNSA, and DOE Generally Followed Federal Guidance and Leading Practices in Implementing a Consolidated Business System

CNS, NNSA, and DOE generally followed DOE information technology guidance and GAO and PMI leading practices in implementing a consolidated business system in three areas: critical milestones, risk management, and investment review.

CNS and NNSA Developed, Reviewed, and Approved Critical Milestone Information Called for in DOE Guidance

CNS and NNSA developed, reviewed, and approved the plans, analyses, and other information identified as required in DOE information technology guidance for the Business System Modernization Project critical decision packages.⁵² They also included other information identified by the guidance as either essential or a best practice.⁵³ CNS provided all of the information identified in the DOE guidance as required for the five critical decision packages shown in figure 3. For example, CNS developed the seven types of information listed as required in DOE guidance for the critical decision-1 package, such as the project

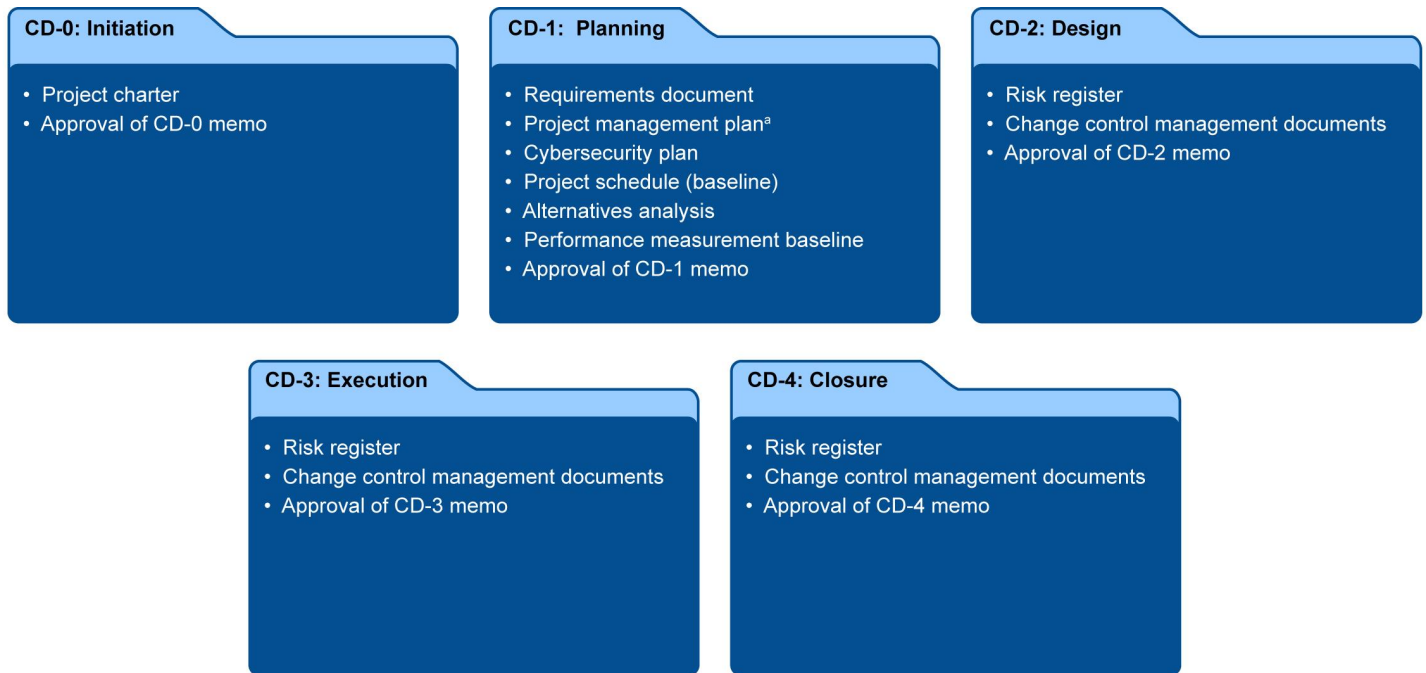
⁵¹NNSA Production Office officials said they reviewed the cost estimates for the Business System Modernization Project on a monthly basis until March 2018. In addition, the Independent Peer Review team focused on project costs analysis as 1 of 13 areas for its review. We did not evaluate the accuracy of these estimates.

⁵²We did not evaluate the sufficiency of the content of these documents.

⁵³DOE's Office of the Chief Information Officer, *Information Technology Project Execution Model Guide*, DOE Guide 415.1-1, July 17, 2014. DOE defines best practices as those that may prove beneficial for successful project management.

management plan. This plan includes the configuration management and change control plan, the performance measurement plan, and the risk management plan.

Figure 3: Information and Approvals Required for Critical Decisions (CD) for Department Of Energy (DOE) Information Technology Project Milestones



Source: GAO presentation of information from DOE's Information Technology Project Execution Model Guide, DOE G 415.1-1. | GAO-19-101

Note: DOE Guide 415.1-1, *Information Technology Project Execution Model Guide*, defines required documents as those endorsed by DOE Order 415.1, *Information Technology Project Management*, and/or the Office of Management and Budget. DOE Guide 415.1-1 also includes (1) essential documents—those that are necessary to maintain or support federal approaches toward strategy, business, security, and technology, and (2) beneficial or best practice documents—those that may prove beneficial for successful project management.

^aThe CD-1 project management plan includes the configuration management and change control plan, the performance measurement plan, and the risk management plan.

CNS and NNSA also included the approval memos in the critical decision packages, cited as required in DOE guidance. Specifically, as part of the required information, DOE guidance calls for each package to contain a critical decision approval memo and states that critical decision approvers should be identified and assigned by the CNS and NNSA project teams and their respective governance early in the project. A critical decision-approval memo indicates that the project is both prepared and adequately funded to enter the next critical decision milestone, according to DOE guidance. Each of the five critical decision packages contained a memo

and was signed and approved by six members of the CNS Executive Steering Committee, the NNSA federal project director, and the NNSA manager of the NNSA Production Office (responsible for administration of the contract). According to CNS and NNSA officials, the CNS and NNSA project teams identified the critical decision approvers before the critical decision-1 milestone was complete. In July 2016, the federal project director established an integrated project team for the Business System Modernization Project to support the two NNSA officials approving the critical decision packages, as directed by DOE guidance. The integrated project team, composed of 13 officials primarily from the NNSA Production Office, reviewed all five critical decision packages for compliance with DOE guidance, according to NNSA documents and officials.

CNS and NNSA also followed DOE guidance regarding information to be included in packages by developing some documents deemed essential, but not identified as required, by DOE guidance. For example, during critical decision-2, seven officials with varying types of expertise from NNSA's Office of the Chief Information Officer and other offices conducted an independent peer review and developed a review report. The DOE guidance considers the review report an essential document and states that the purpose of the review is for officials with no association with the project to provide the NNSA project manager with an objective assessment of the project status and whether the critical decision package should be submitted for review. NNSA, in its review report, included the background of each reviewer and criteria for independence, including that the review's recipients did not have a vehicle to influence the reviewer and therefore the outcome of the review. The team focused on 13 areas, including project organization, performance baseline, project cost analysis, project schedule maturity, risk management, and requirements management. The report concluded that the project had a strong management team and was being managed and structured effectively, although the schedule for October 2017 implementation was aggressive.

CNS also followed guidance by including some documents in its critical decision packages considered best practice by DOE guidance. For example, CNS provided the basis of its \$33 million cost estimate for the Business System Modernization Project, including labor rates and hours for each of the 3 fiscal years in the critical decision-0 package. DOE guidance also states that quarterly project review presentations are a best practice. CNS generally provided these presentations on a monthly basis starting in September 2016—a few months after the project began—to

March 2018—when CNS provided NNSA with the project closure package. The presentations were provided to CNS’s Executive Steering Committee, the NNSA Federal Project Director, and the NNSA Integrated Project Team, according to NNSA and CNS officials. The presentations addressed, for example, the project’s status, including cost and schedule updates, resource issues, status of critical decisions, and risks.

CNS and NNSA Generally Followed Leading Practices for Risk Management in their Consolidation Effort

In developing the consolidated business system, NNSA and CNS generally followed five leading practices for risk management as identified in PMI’s Practice Standard for Project Risk Management: (1) plan risk management, (2) identify risks, (3) perform risk analysis, (4) plan risk responses, and (5) monitor and control risks.⁵⁴ For example, CNS developed a risk management plan for the critical decision-1 milestone of the project. In addition, CNS documented information in its risk register, such as a description of the risk and the likelihood of occurrence.

While CNS officials completed most data fields in the risk register for the critical decision-4 milestone, CNS did not identify risk owners in the risk owner field.⁵⁵ Identifying risk owners is a risk management activity identified in PMI’s leading practices for risk management. CNS officials stated that they did not include risk owners in the register because the risk owner is nearly always the product owner, although there may be more than one product owner. In some cases, the risk owner may be a member of CNS’s executive steering committee or a project team member. CNS officials added that all changes in risk were discussed with the CNS executive steering committee at the monthly meetings. They also said that they properly managed all risks in their daily meetings and bi-monthly meetings. As a result, CNS officials said none of the potential project risks identified during the project materialized. Nevertheless,

⁵⁴Project Management Institute, Inc., *Practice Standard for Project Risk Management*, 2009. The Project Management Institute is a not-for-profit association that provides global standards for, among other things, project and program management. These standards are utilized worldwide and provide guidance on how to manage various aspects of projects, programs, and portfolios.

⁵⁵Also, for three risks, CNS did not identify the risk responses in the March 2018 risk register because they had decided to accept those risks instead of respond to them. For a fourth risk, CNS subsequently decided to close the risk for this project and place the risk in another project’s risk register, as noted in their July 2018 risk register.

documenting risk owners helps assure that responsibilities for the risks for phase two of the Enterprise Resource Planning consolidation effort are clear, thus increasing assurance that these risks are addressed. We discussed the PMI leading practice of including the risk owner in the risk register and CNS agreed that they would include this information for phase two of the Enterprise Resource Planning consolidation. As agreed, CNS's September 2018 risk register for that project documents the risk owner assigned to each risk.

DOE's Investment Review Board Is Reviewing this System in Accordance with Leading Practices

DOE's investment review board was not initially providing oversight for CNS's business system but is now doing so. The board is chaired by the DOE Deputy Chief Information Officer and its regular invitees include senior information technology officials from the Office of the Chief Information Officer, Office of Science, Office of Environmental Management, and NNSA. DOE's guidance on capital planning for information technology states that the DOE investment review board is to review major information technology investments annually and institute corrective actions when investments do not meet their objectives.⁵⁶ The guide states that the review by the board sets in place a structured process to provide senior management with decision-making information. Also, GAO's guide for managing information technology investments recommends that agencies establish investment review boards to provide oversight for information technology projects throughout all phases of their life cycle, including operations and maintenance.⁵⁷ Investment review boards provide oversight to help ensure that investments (1) are appropriately selected, controlled, and evaluated over time; and (2) remain consistent with organizational needs and priorities.

DOE's investment review board reviewed this system in November 2018, after the project was closed. According to the board's November 2018 memo, the board selected this system for review because GAO identified it as lacking board oversight during this audit. Officials in DOE's Office of the Chief Information Officer stated that the board has the goal of reviewing all DOE major investments but did not review the system earlier

⁵⁶DOE, Office of the Chief Information Officer, *U.S. Department of Energy Guide to IT Capital Planning*, (March 2017).

⁵⁷[GAO-04-394G](#).

because they had other higher priorities for which concerns were identified. In December 2016, the board had 24 DOE major investments to review and in 2017, it had 18 major investments. The board plans to review the investment annually throughout the life of the system and follow-up on issues identified through these reviews, according to officials from DOE's Office of the Chief Information Officer. Because DOE has started reviewing the system, we are not making a recommendation.

NNSA's Approach to Plan and Implement Agency-Wide Common Financial Reporting is Ongoing but Generally Has Not Followed Leading Practices

NNSA has taken some steps to plan for and implement a common financial reporting effort across the nuclear security enterprise, including the development of common cost elements. However, NNSA has not taken other steps, including the development of a common work breakdown structure, which NNSA does not intend to fully pursue. In addition, NNSA generally has not followed leading project management practices, such as collecting requirements and completing a detailed schedule of activities, in its planning and implementation of the effort.

NNSA Has Completed Some Steps to Implement Common Financial Reporting, and Is Not Pursuing One Important Step

NNSA has completed some steps to plan for and implement common financial reporting across the nuclear security enterprise, but has not yet completed other steps and does not plan to complete one key step. NNSA began planning the common financial reporting effort based on the recommendations of the Lean Six Sigma report from December 2014 and should be completed by December 23, 2020, as required by statute. NNSA's annual reports to Congress and the requirements of the National Defense Authorization Act for Fiscal Year 2017, as well as NNSA's internal planning efforts, include steps to implement common financial reporting. We identified seven steps related to NNSA's efforts to implement common financial reporting: (1) identifying an approach and

developing a tool to implement common financial reporting, (2) developing a policy, (3) establishing common cost elements and definitions, (4) identifying and reporting costs for programs of record and base capabilities, (5) implementing a common work breakdown structure, (6) collecting financial data from the M&O contractors, and (7) publishing and analyzing data. NNSA's progress toward implementing the seven steps we identified varied, with NNSA completing two steps, not yet completing four steps, and not pursuing one step, as shown in table 1 below.

Table 1: National Nuclear Security Administration’s (NNSA) Progress toward Implementing Steps for Common Financial Reporting, as of December 2018

Steps	Progress
Identify an approach and develop a tool to implement common financial reporting	Completed
Develop a policy	Not yet completed
Establish common cost elements and definitions	Completed
Identify and report costs for programs of record and base capabilities	Not yet completed
Implement a common work breakdown structure	Not pursuing
Collect financial data from M&O contractors ^a	Not yet completed
Publish and analyze data	Not yet completed

Legend: M&O = Management and operating

Source: GAO analysis of NNSA documents and interviews with NNSA officials. | GAO-19-101

Notes: We identified seven steps based on NNSA’s annual reports to Congress and the requirements of the National Defense Authorization Act, as well as NNSA’s internal planning efforts, as of December 2018.

^aFinancial data is for fiscal year 2018 for participating program offices including the Offices of Defense Programs; Defense Nuclear Nonproliferation; Emergency Operations; Safety, Infrastructure, and Operations; Defense Nuclear Security; and Counterterrorism and Counterproliferation.

Identify an approach and develop a tool to implement common financial reporting. NNSA completed the step to identify an approach and develop a tool to implement common financial reporting. In NNSA’s 2016 plan, the agency identified two efforts by program offices to collect financial data from M&O contractors that the agency would use to gather lessons learned for implementing common financial reporting. In September 2014, the Office of Safety, Infrastructure, and Operations deployed a new work breakdown structure to report information on financial data and other information, such as program scope and schedule. In December 2014, the Office of Defense Programs started a separate effort to standardize the collection of financial data from M&O contractors and to explore the use of DOE’s integrated data warehouse. Neither effort assessed the feasibility of establishing an integrated financial system for all M&O contractors, but rather focused on new,

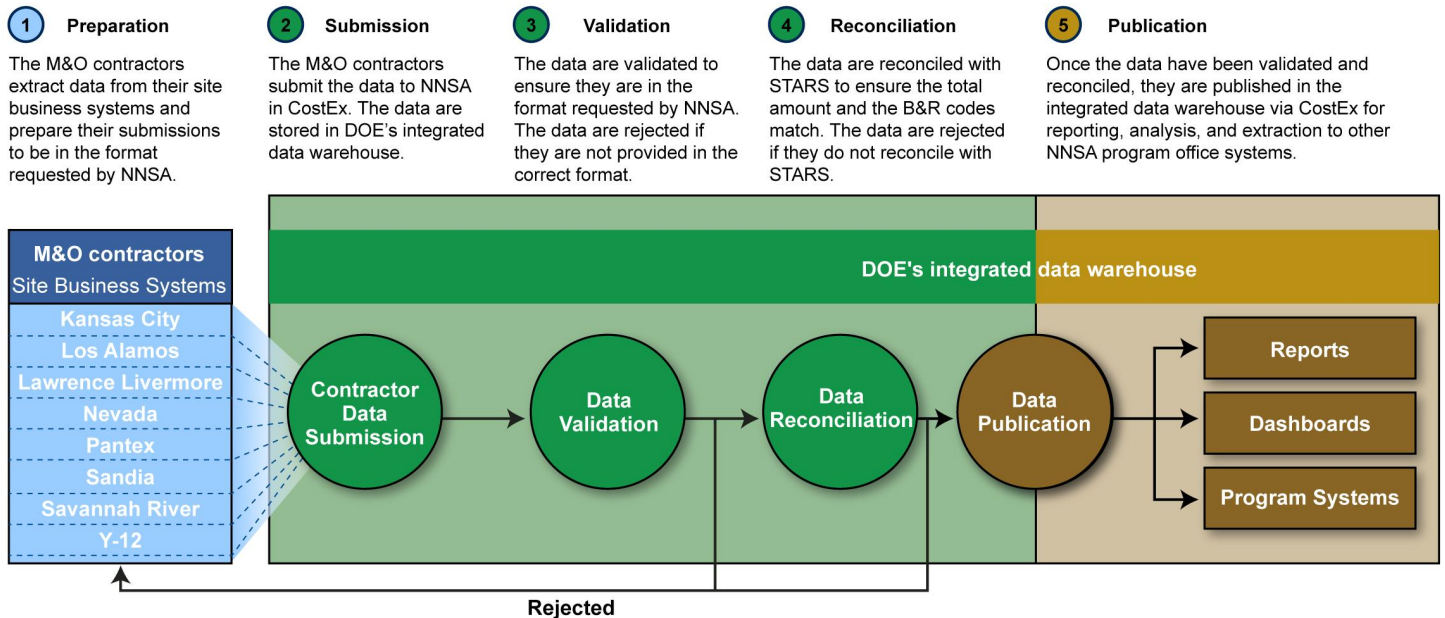
streamlined ways of crosswalking M&O contractors' financial data.⁵⁸ This is in contrast to CNS's integration of financial systems at Y-12 and Pantex, as recommended by NNSA.⁵⁹

Ultimately, NNSA decided to use the approach piloted by the Office of Defense Programs of collecting and storing the M&O contractors' financial data for common financial reporting in DOE's Office of the Chief Financial Officer's existing integrated data warehouse and using this data for common financial reporting. NNSA officials said the decision to use the integrated data warehouse, rather than developing a new information technology system, was made to reduce the cost needed to implement common financial reporting. The Office of Defense Programs developed a new database tool called CostEx to be used as the interface for M&O contractors to submit their financial data, as well as a data reporting and analysis tool. The Office of Defense Programs has been using this process to collect financial data from the M&O contractors for its programs since fiscal year 2017. The NNSA financial integration team will use the data management process piloted by the Office of Defense Programs, shown in figure 4, to implement common financial reporting.

⁵⁸In a 2011 NNSA white paper on exploring the potential benefits of administrative shared services by NNSA M&O contractors, the agency explored the feasibility of a single, integrated financial system across the nuclear security enterprise. Among the benefits included in the white paper: (1) support improved accountability for program and project results; (2) improved integrity and credibility of information, and; (3) improved communication through accounting standardization, such as standardized work breakdown structures for projects. Among the reasons why an integrated system would not benefit NNSA: (1) high up-front costs; (2) resistance to shared services due to M&O contractors' historic independence, and; (3) concern for control over M&O contractors' proprietary information. NNSA officials we spoke with also added that such a system would be prohibitively expensive and take a long time to implement.

⁵⁹NNSA officials do not believe that a financially integrated system, such as CNS's system, would be compatible with M&O contractors' parent company information technology systems.

Figure 4: NNSA’s Common Financial Reporting Data Management Process, as of November 2018



B&R: Budget and Reporting
 DOE: Department of Energy
 M&O: management and operating
 NNSA: National Nuclear Security Administration
 STARS: Standard Accounting and Reporting System

Source: GAO presentation of information from NNSA documents and interviews. | GAO-19-101

Note: M&O contractors are identified by their site location. The complete name of each location is as follows: Kansas City National Security Campus, Los Alamos National Laboratory, Lawrence Livermore National Laboratory, Nevada National Security Site, Pantex Plant, Sandia National Laboratories, Savannah River Site, and Y-12 National Security Complex. Although NNSA consolidated the contract for Y-12 and Pantex, the agency plans to collect data separately for the sites from the contractor as of fiscal year 2018.

While initial data collection efforts under common financial reporting are ongoing, the M&O contractors will also continue to report financial data using the previous processes for the program offices until NNSA officials have sufficient assurance that the data being collected for common financial reporting are accurate and reliable. As discussed previously, each program office has different requirements for financial information, and therefore the M&O contractors’ financial data are reported in different formats. These varied data collection efforts require the contractors to individually crosswalk the financial data from their own business systems into the different formats requested by the individual program offices in addition to reporting for the common financial reporting effort. According to officials from five of the M&O contractors, completing the individual program office financial data requests is time consuming and inefficient. If NNSA’s effort to implement common financial reporting is successful,

according to six M&O contractors we interviewed, the number of financial data requests could potentially be reduced, saving them time and resources.

Develop a policy. NNSA has not yet completed the step of developing a policy for common financial reporting. NNSA began developing an enterprise-wide financial integration policy to implement common financial reporting in October 2016. However, as of December 2018, the policy had not been completed. According to the program director for financial integration, the policy has been approved by all NNSA program, field, and functional offices, and all M&O contractors, but is awaiting final approval by NNSA leadership. Based on our review of a draft, the policy establishes the roles and responsibilities of NNSA offices and the M&O contractors for common financial reporting. According to the program director for financial integration, the M&O contractors will submit their financial data in alignment with the draft policy while it is being finalized. The M&O contractors we interviewed did not raise this as an issue.

Establish common cost elements and definitions. NNSA completed the step of establishing common cost elements and definitions. In March 2018, NNSA's Financial Integration Executive Committee approved a list of 22 common cost elements and definitions to be used by NNSA program offices, which, according to NNSA officials, is a critical step toward implementing common financial reporting.⁶⁰ Without common cost elements, NNSA was limited in its ability to report lower-level costs consistently across programs and sites. Using common cost elements could allow NNSA to collect financial information from each site in a standardized format. The Financial Integration Executive Committee will review the list of common cost elements and definitions at least once annually to determine whether there is a need to modify the list. For example, officials in the Office of Defense Programs told us they would like to add additional labor cost elements beyond the three direct labor and fringe categories established in March 2018.⁶¹ However, as of August 2018, the program director for financial integration, officials from the seven M&O contractors, and two other NNSA program offices were not in

⁶⁰Cost elements capture discrete costs of a particular activity of work at a high level, such as labor, material, and other fringe benefits in addition to salary, such as pensions and health insurance. NNSA's cost elements for common financial reporting include direct labor and fringe, equipment, and materials and supplies, among others.

⁶¹Under the current cost elements, NNSA collects financial data for craft labor; technical, engineering, and scientific labor; and managerial and administrative labor.

agreement to add additional labor categories, in part, because data collection for fiscal year 2018 had not been completed. In addition, the M&O contractor officials were concerned about making additional changes during data collection and adding to their workload, while officials from the program office had not had the opportunity to analyze the common financial reporting data and determine whether the data provided met their requirements.

Identify and report costs for programs of record and base capabilities. NNSA has not yet completed the step of identifying and reporting costs for programs of records and base capabilities. A base capability captures an increment of discipline, or skill, which serves a variety of functions depending on the desired product. NNSA's base capabilities range from logistics and mission support to specific scientific and technical expertise, such as high energy density physics. Even if the scope of a program were reduced or eliminated, it may be necessary to maintain base capabilities for NNSA to achieve its mission. Based on the findings of the Lean Six Sigma report, NNSA did not have generally accepted or consistently applied definitions of base capabilities or programs of record across the nuclear security enterprise, nor did it possess a clear and consistent methodology in policy for delineating programs of record and base capabilities.⁶² The National Defense Authorization Act for Fiscal Year 2017 required NNSA to establish definitions and methodologies for identifying and reporting costs for programs of record and base capabilities. In May 2018, NNSA issued guidance for M&O contractors to develop strategic plans that would require the M&O contractors to include an overview of the site's base capabilities. In this guidance, NNSA identified 25 base capabilities that comprise the foundational competencies at its sites.⁶³ According to NNSA officials, as of October 2018, each NNSA M&O contractor has included information in its strategic plan describing base capabilities. Officials working on common financial reporting said they chose to adopt definitions drafted by the broader NNSA effort, rather than developing their own, because the list of common programs of record and base

⁶²In 2010, we found that NNSA lacked the total cost information about existing programs to ensure it could accurately identify the costs of its base capabilities for future budget justifications. [GAO-10-582](#).

⁶³NNSA has adopted the term core capabilities, rather than base capabilities, to ensure consistency within DOE. The core capabilities were developed in coordination with the Department of Energy, particularly the Office of Science, to ensure there was a standard set of capabilities used throughout the agency.

capabilities should be consistent throughout the nuclear security enterprise. According to the program director for financial integration, the NNSA financial integration team briefed congressional staff in September 2018 about their approach to ensure that the draft guidance satisfied the requirements of the National Defense Authorization Act for Fiscal Year 2017 and the congressional staff generally agreed with their approach.⁶⁴ However, according to this official, NNSA has not yet determined how to incorporate base capabilities and programs of record into the collection and reporting of costs through the common financial reporting effort.

Implement a common work breakdown structure. NNSA is not pursuing a common work breakdown structure across the program offices in the nuclear security enterprise.⁶⁵ In March 2018, the Financial Integration Executive Committee made the decision to allow two offices—the Offices of Safety, Infrastructure, and Operations and Defense Nuclear Nonproliferation—to use their own work breakdown structures rather than convert to the work breakdown structure created by the Office of Defense Programs. The financial integration team does not plan to require the two program offices to crosswalk between the work breakdown structures because it would require additional resources to develop and maintain, according to NNSA officials. Officials from the Office of Safety, Infrastructure, and Operations said they do not want to change their work breakdown structure because they use their structure for scope, schedule, and risk management, in addition to budget and cost. Further, the office already invested the resources into the work breakdown structure’s development and its structure had been established to be responsive to requests from Congress on infrastructure investments.⁶⁶ Officials from the Office of Defense Nuclear Nonproliferation had similar concerns about changing their work breakdown structure and added that

⁶⁴Specifically, the financial integration team briefed staff on the Senate and House of Representatives Armed Services Committees.

⁶⁵In December 2014, NNSA released a report that recommended the agency develop a common work breakdown structure for the nuclear security enterprise to consistently collect data across all programs, sites, and time. However, NNSA’s 2016 plan states that the agency will explore the feasibility of a common work breakdown structure. In our 2017 report, we concluded that exploring the feasibility of a common work breakdown structure leaves open the option of not doing so.

⁶⁶Officials from the Office of Safety, Infrastructure, and Operations noted that the costs collected in their work breakdown structure could be allocated to programs using other methods without requiring any change to the work breakdown structure. NNSA officials said they will continue to assess the use of a common work breakdown structure and other methods of collecting common financial data.

their program executes its mission differently, such as using contracts in addition to the M&O contracts and conducting operations overseas that requires them to have a unique work breakdown structure.

The National Defense Authorization Act for Fiscal Year 2017 requires NNSA to develop a common work breakdown structure as part of its efforts to implement common financial reporting. In addition, according to GAO's *Cost Estimating and Assessment Guide*, standardizing the work breakdown structure is considered a best practice because it enables an organization to collect and share data among programs and results in more consistent cost estimates, allows data to be shared across organizations, and leads to more efficient program execution.⁶⁷ The work breakdown structure should be standardized at a high level to foster flexibility so that lower levels can be customized to reflect how individual programs' work is managed. In addition, all activities associated with a program, including facilities, should be included as elements of that program's work breakdown structure. However, as previously mentioned, senior leaders across the program offices that comprise the Financial Integration Executive Committee have not agreed that a common work breakdown structure is needed to implement common financial reporting due to differences in missions and functions across the program offices. For example, the Office of Defense Programs' mission is to maintain and modernize the nuclear stockpile while the Office of Safety, Infrastructure, and Operations develops and executes investment, maintenance, safety, and operations programs and policies all in support of facilities and infrastructure. Leadership in the NNSA Office of Management and Budget expressed concern that NNSA would need to spend a lot of time changing its processes, which would distract from their mission execution. Furthermore, according to NNSA Office of Management and Budget officials, the authority to require other program offices to change their work breakdown structures lies with the NNSA Administrator.

Not standardizing the work breakdown structure causes difficulty in comparing costs from one contractor or program to another—the condition the common financial reporting effort was intended to address—resulting in substantial expense to government estimating agencies when collecting and reconciling contractor cost and technical data in a

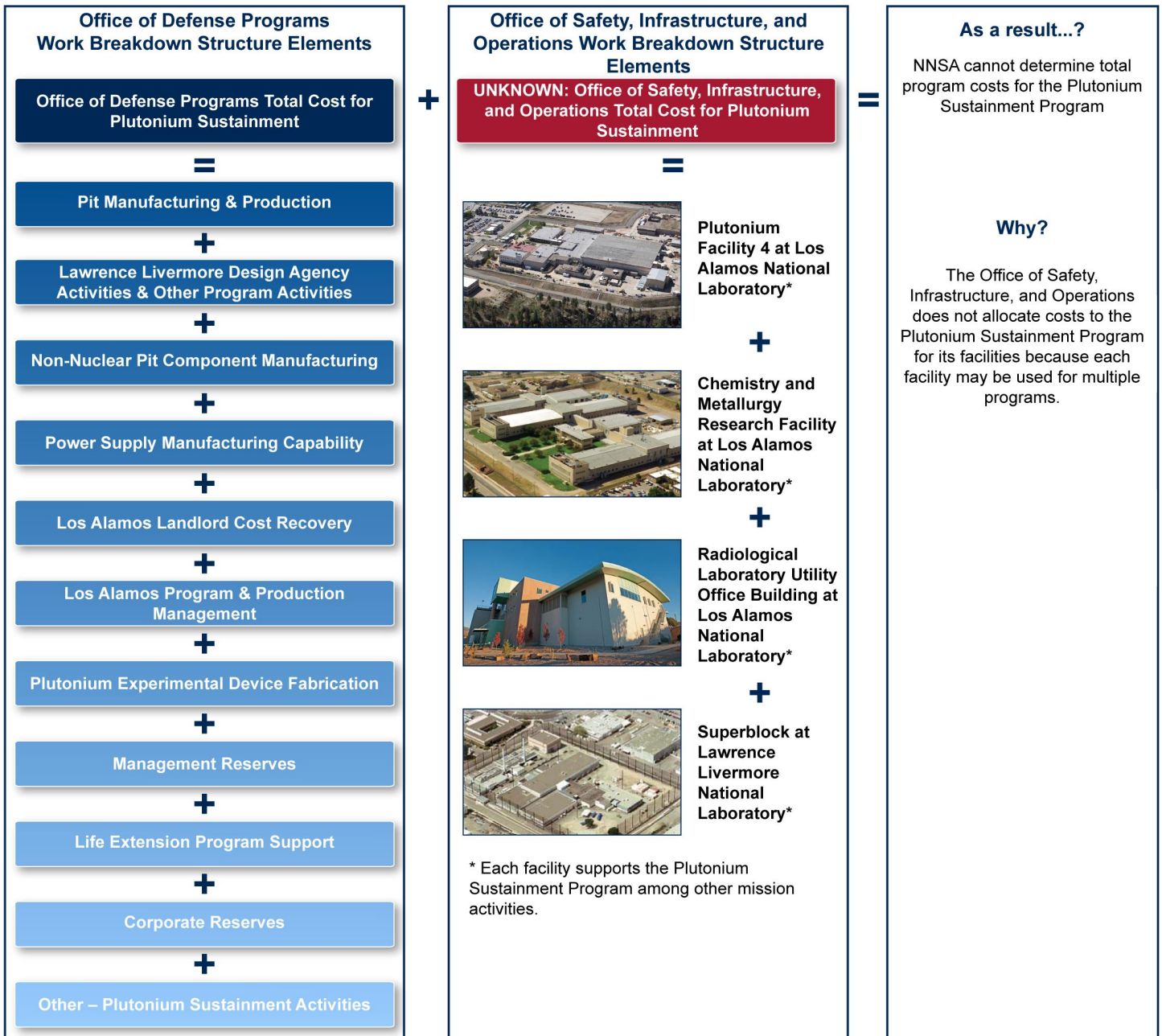
⁶⁷GAO, *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, [GAO-09-3SP](#) (Washington, D.C.: March 2009).

consistent format, according to GAO's *Cost Estimating and Assessment Guide*. We previously identified this issue in NNSA.⁶⁸

As described in figure 5, activities captured under the two different work breakdown structures in use by the Office of Defense Programs and the Office of Safety, Infrastructure, and Operations contribute to executing the plutonium sustainment program and its enabling infrastructure. However, by using different work breakdown structures, NNSA has not been able to determine total costs for programs. Specifically, for its plutonium sustainment program, the Office of Defense Programs organizes its work breakdown structure by work elements that fall under the program, such as pit manufacturing and production or life extension program support. In comparison, the Office of Safety, Infrastructure, and Operations organizes its work breakdown structure around the scope of its mission, which includes facilities and other enabling infrastructure. As a result, all activities associated with the plutonium sustainment program are not included in a common work breakdown structure. As previously described, all activities associated with a program, including facilities, should be included as elements of that program's work breakdown structure according to GAO's *Cost Estimating and Assessment Guide*.

⁶⁸[GAO-10-582](#).

Figure 5: National Nuclear Security Administration’s (NNSA) Management of the Plutonium Sustainment Program and Its Infrastructure



Source: GAO analysis of NNSA documents. Courtesy of NNSA (photos). | GAO-19-101

Notes: Other facilities and infrastructure may support the Plutonium Sustainment Program.

According to officials from the Office of Safety, Infrastructure, and Operations, they did not design their work breakdown structure around specific NNSA programs or base capabilities. Rather, they designed it around the scope of their mission, which includes operations of facilities, maintenance, recapitalization, disposition, asset management programs, and construction of general NNSA infrastructure as well as safety, environmental, and material operations.

According to the Lean Six Sigma report and other NNSA officials, not having a common work breakdown structure limits the potential for the financial integration team to accurately report and compare program costs and conduct cost comparisons across the sites, among other things (see fig. 5). Further, officials from five of the M&O contractors we interviewed were concerned that without a common work breakdown structure, common financial reporting would not reduce the number of requests for financial data or reduce the resources needed to submit financial data in different work breakdown structures to NNSA. Without a common work breakdown structure, NNSA cannot be assured that its efforts will result in the collection of reliable, enterprise-wide financial data that satisfies the needs of Congress and other stakeholders and addresses long-term deficiencies in NNSA's ability to report the total costs of its programs.

Collect financial data from M&O contractors. NNSA has not yet completed the step of collecting financial data from the M&O contractors for all participating program offices. NNSA decided to start collecting M&O contractors' financial data using the approach piloted by the Office of Defense Programs and described previously in figure 4.⁶⁹ In July 2018, NNSA began to collect financial data from the M&O contractors for fiscal year 2018 under the agreed-upon cost elements and using the different program offices' work breakdown structures, while testing its approach to data validation and reconciliation. The program director for financial integration anticipated needing several months to address issues with data collection and accuracy among the M&O contractors, the program offices, and the financial integration team. This is because while the Office of Defense Programs piloted the process, officials from six M&O contractors told us there was a need to continue to make updates to the NNSA work breakdown structure, which added to their workload and made the process take longer to complete. According to NNSA officials, changes to the other program offices' work breakdown structures have similarly been made while collecting data for fiscal year 2018, including

⁶⁹As of November 2018, participating program offices include the Offices of Defense Programs; Defense Nuclear Nonproliferation; Emergency Operations; Safety, Infrastructure and Operations; Defense Nuclear Security; and Counterterrorism and Counterproliferation. Within NNSA, the Office of Naval Reactors is not participating in the effort.

necessary changes to account for new projects or activities. As of December 2018, NNSA had not yet collected data from all M&O contractors for all program offices for fiscal year 2018.⁷⁰ In addition to working through issues with data validation and reconciliation, the financial integration team is working to establish a change control process for the work breakdown structure. Agency officials said this process will minimize the frequency of the changes and ensure they are appropriately tracked. The program director for financial integration said that given the issues with the fiscal year 2018 data collection, it is likely that NNSA will need to address similar data validation and reconciliation issues during the fiscal year 2019 data collection process.

Publish and analyze data. NNSA has not yet completed the step of publishing and analyzing data for common financial reporting. Once NNSA completes collection of M&O contractor financial data for fiscal year 2018 and ensures the effort produced accurate and reliable data, the financial integration team plans to publish the data in the integrated data warehouse via CostEx for extraction by program offices and for analysis. The NNSA financial integration team plans to conduct analysis of the financial data across the nuclear security enterprise. Program offices will be responsible for conducting their own individual program analysis using the published financial data. Officials from two program offices said that the data will need to be extracted into program office tools, such as the G2 program management system used by the Office of Safety, Infrastructure, and Operations, and others. As of December 2018, NNSA had performed basic testing of this process, but had not been able to fully test the process because not all fiscal year 2018 data were available. Officials said they planned to begin to work with the individual program offices in January 2019 to ensure the data can be successfully extracted from CostEx. The program office officials did not know how long it would take to complete these steps and transition to using data from the integrated data warehouse, rather than collecting M&O financial data themselves.

⁷⁰According to NNSA documentation, all fiscal year 2018 data has been submitted by seven of the eight sites. However, data submitted for some program offices for some sites is incomplete for a variety of reasons.

NNSA's Approach to Planning and Implementing Common Financial Reporting Generally Has Not Followed Six Project Management Leading Practices

NNSA's approach to planning and implementing common financial reporting generally has not followed six leading practices for project management. PMI's *A Guide to the Project Management Body of Knowledge* provides leading practices for project management that agencies may follow while planning and implementing projects.⁷¹ We identified the following six leading practices as applicable to NNSA's implementation of common financial reporting: (1) collecting requirements to manage the project scope, (2) managing the project schedule, (3) developing a complete project budget, (4) managing and reporting the project costs, (5) managing the project risk, and (6) managing stakeholder engagement. Until NNSA's approach to planning and implementing common financial reporting incorporates leading practices for project management, NNSA risks implementing a project that does not meet stakeholder needs, exceeds its congressionally required completion date, and is improperly resourced.

Collecting requirements to manage the project scope. NNSA does not have clear and consistent requirements for its common financial reporting efforts because the program director did not collect or document requirements from the NNSA program offices or other stakeholders as part of its efforts to manage the scope of implementing common financial reporting. Requirements are conditions or tasks that define the ultimate goals and project scope and must be met to ensure the successful completion of the project. PMI's leading project management practices emphasize the importance of collecting and documenting requirements to help define project scope. These requirements need to be documented in enough detail to be included in the scope baseline and to be measured against once project execution begins. Further, leading project management practices state that requirements should be updated and become more detailed as more information about the project is known.

NNSA's draft enterprise-wide financial integration policy states that the program director is responsible for developing and maintaining clear and consistent integrated financial reporting requirements. Although NNSA's

⁷¹Project Management Institute, Inc. *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*, Sixth Edition, 2017.

July 2018 annual report to Congress stated that the financial integration team collected system requirements from the program offices and other stakeholders, including DOE's and NNSA's Offices of the Chief Information Officer, for common financial reporting, NNSA officials said that they had not collected and documented those requirements. NNSA officials told us they did not think it was necessary to collect or document the overall requirements from those groups to develop the project scope because the requirements were already established in the National Defense Authorization Act for Fiscal Year 2017. However, while the language in the act includes four elements that should be incorporated into the implementation of common financial reporting, the language does not provide specific or detailed requirements for successful implementation of common financial reporting. Without collecting, maintaining, and documenting requirements, NNSA will not have assurances that the data collected through common financial reporting will meet the needs of stakeholders or lead to successful implementation of common financial reporting. NNSA intends for the financial data collected through common financial reporting to meet the needs of other internal stakeholders, including program managers. However, if the data collected are not useful for program managers, they may continue to collect their own financial data from the M&O contractors outside of this effort—as has happened with a past crosswalking effort—resulting in potentially duplicative data collection efforts.

Managing the project schedule. NNSA does not have a detailed project schedule for implementing common financial reporting and has not provided a detailed schedule for future work to be conducted after the end of 2018. This is consistent with our January 2017 report where we found that NNSA did not provide details regarding planned activities in its high-level timeline included in its 2016 plan.⁷² NNSA continued to provide high-level timelines in its annual reports to Congress. In addition, the project continues to be behind some of those identified timeframes. For example, NNSA planned to draft the enterprise-wide financial integration policy in the second half of fiscal year 2015 and complete it by the second half of fiscal year 2017, according to the July 2017 annual report. However, NNSA did not begin to draft the policy until October 2016 and it has not been completed as of December 2018. Further, officials from four M&O contractors told us the effort to implement common financial reporting has been slow and drawn out.

⁷²[GAO-17-141](#).

PMI's leading practices for project management emphasize the importance of project schedule management, including the establishment and documentation of the project schedule with tasks and activities. Additionally, NNSA is required to report updates to Congress on the status of activities related to implementation for the preceding year. Because NNSA has not developed a detailed project schedule, NNSA officials said the agency has taken and continues to take an informal approach to scheduling tasks and activities for the planning and implementation of common financial reporting. According to NNSA officials, their focus is on finalizing the policy and collecting fiscal year 2018 data from the M&O contractors for the program offices. Without a detailed project schedule, NNSA risks not understanding its progress toward completing the project, may be limited in its ability to accurately report status information to Congress, and will have less assurance that the effort will be completed by December 2020, as required by the National Defense Authorization Act for Fiscal Year 2017.

Developing a complete project budget. Neither NNSA nor Congress has information on the estimated total cost of common financial reporting—to include the costs of human resources—because NNSA has not developed a budget for implementing this effort. NNSA's 2016 plan included an initial estimate of between \$10 million and \$70 million for implementing common financial reporting, with the largest cost variable being the selection of an information technology solution. In 2017, we found that NNSA's 2016 cost estimate provided no details regarding how the estimate was developed.⁷³ NNSA revised the estimate in its July 2018 annual report to Congress, reflecting costs between \$8 million and \$12 million for fiscal year 2017 through fiscal year 2020 because the agency decided to use the existing integrated data warehouse rather than design a new system for common financial reporting. However, NNSA did not provide any details regarding how the new estimate was established and whether it incorporated human resource needs. For example, according to the program director for financial integration, from January through September 2018, the financial integration team consisted of the program director and one other staff member who worked on a part time basis to implement common financial reporting; however, there is no information included in the cost estimate about human resource costs. NNSA officials told us the agency plans to reorganize existing staff within its Office of

⁷³We found that estimate was based on professional judgment and input from contractors. [GAO-17-141](#).

Management and Budget to start analyzing the financial data collected as part of the common financial reporting effort, but the staff would still have their previous job requirements. PMI's leading practices for project management emphasize the importance of defining how project costs will be estimated, budgeted, managed, monitored, and controlled. Budget inputs should include consideration of human resources, among other things. NNSA officials said that the agency decided not to produce a complete project budget for its annual report to Congress because there are potential developments that may significantly change the budget in the future. Without a budget that includes complete information on project costs, including human resource needs, NNSA will not have assurances that costs can be controlled and monitored throughout the implementation of common financial reporting or that the project will have sufficient resources to achieve its scope and schedule.

Managing and reporting the project costs. Neither NNSA nor Congress has information on the total amount spent to implement common financial reporting to date because NNSA does not have a method for collecting and reporting these costs. In its July 2017 annual report to Congress, NNSA reported that the cost of planning for common financial reporting in 2016 was \$307,000 for contractor support and travel. However, those reported costs did not include costs associated with the Office of Defense Programs' pilot, according to an NNSA official. In addition, the July 2018 annual report does not include information on the total amount spent to implement common financial reporting. NNSA also has not been tracking M&O contractor costs associated with implementing common financial reporting, according to an NNSA official. However, starting in fiscal year 2019, NNSA plans to collect information on how much it costs the M&O contractors to submit financial data for common financial reporting, according to the program director for financial integration. The National Defense Authorization Act for Fiscal Year 2017 requires NNSA to submit an annual report to Congress that includes information on the costs related to the implementation of common financial reporting. Also, PMI's leading practices for project management emphasize the importance of defining how project costs will be estimated, budgeted, managed, monitored, and controlled. According to NNSA officials, the funding to implement common financial reporting comes from its Federal Salaries and Expenses account because the costs are primarily for labor and NNSA does not request separate funding for implementing common financial reporting in the president's budget. NNSA does not have a method to collect and report information on all costs associated with implementation of the common financial reporting effort, according to NNSA officials. Personnel working on the effort do so

on a part-time basis, and information on the amount of time spent on such tasks is not collected on their timesheets, according to NNSA officials. NNSA will not have assurances that the cost information it is required to provide to Congress is accurate without collecting and documenting costs associated with the implementation of common financial reporting. Further, NNSA cannot compare its budget for the project to actual costs to assess how the project is performing.

Managing project risk. NNSA has not fully identified, documented, or developed plans to mitigate potential risks related to implementing common financial reporting because NNSA has not conducted formal risk management activities. According to PMI leading practices, agencies may take steps to manage project risk while implementing complex projects to create value while minimizing risk. The program director for financial integration identified risks to implementing common financial reporting, such as that using DOE's integrated data warehouse to store M&O contractor cost data may not be successful and that the M&O contractor data submissions may not be able to be reconciled with STARS, DOE's official accounting system. While the program director identified risks to implementing common financial reporting, he said NNSA had not documented those risks or created a plan to address those risks. Furthermore, officials from two program offices also identified risks that their program management systems may not be able to successfully extract financial data from CostEx. PMI's leading practices for project management emphasize the importance of defining how to conduct risk management activities for a project, including the process of identifying risks, documenting those risks, and planning how to address risk exposure. The National Defense Authorization Act for Fiscal Year 2017 also requires NNSA to report to Congress on the risks related to implementation of common financial reporting, but the agency has not done so. NNSA officials told us they decided not to have a formal process for identifying and documenting risks at this time. Rather, risks are identified on an informal basis by the financial integration team. By engaging in project risk management, NNSA will have more assurance that the project can enhance opportunities and avoid or mitigate negative risks that would lead to problems, such as delays, cost overruns, or performance shortfalls.

Managing stakeholder engagement. NNSA has engaged some stakeholders throughout the planning and implementation process, but has not engaged with others because NNSA does not have an approach for engaging with stakeholders for the project. According to PMI leading practices, stakeholder engagement consists of communicating and

working with stakeholders, such as program office officials and M&O contractors, to meet their needs and expectations, address issues, and foster an appropriate level of involvement. The Office of Defense Programs, as part of its pilot project, has engaged with the M&O contractors through regular meetings that have been held since 2015. Officials from all seven M&O contractors we interviewed said their level of involvement has been adequate and four contractors said that they felt this effort may be successful because of their substantive collaboration with NNSA.

In contrast, NNSA program office officials have not been consistently engaged throughout the planning and implementation process. Officials from two program offices we interviewed said they have been minimally involved in the efforts to date, in part because these offices have different needs and expectations for common financial reporting. Officials from four program offices we interviewed said they are not sure whether the data collected by the common financial reporting effort will be useful for managing their programs. Officials from one program office suggested that this issue could be addressed by engaging with program office officials who will be using the financial data collected. Further, a senior official from one program office told us that he could not fully describe the goals of NNSA's common financial reporting effort but said that common financial reporting data would not improve the program office's decision making process.

The previous program director for financial integration established a number of working groups that included membership from some of the program offices to address different activities associated with common financial reporting, such as common cost elements or a common work breakdown structure. However, officials from one program office said those working groups were fragmented, not provided with any guidance, did not meet on a regular basis, and it was unclear how their input was incorporated into the decision-making process. In addition, the current program director for financial integration said it was unclear what work was produced by the working groups based on the lack of documentation produced. According to an official from the Office of Defense Programs, program office officials have been invited to attend their quarterly meetings with the M&O contractors, but those officials have not regularly attended the meetings. However, officials from two of the program offices said that they had not regularly been attending the quarterly meetings because those meetings have been led by the Office of Defense Programs and focused on their data collection effort, rather than the larger common financial reporting effort. Officials from six M&O

contractors we interviewed said they were concerned that NNSA has not received agreement from the program offices on implementing common financial reporting, including agreement about a common work breakdown structure. The program director for financial integration told us that the financial integration team started to hold regular meetings with program offices in August 2018 to discuss common financial reporting. It is unclear how that input will be incorporated into the planning and implementation of common financial reporting.

PMI's leading practices for project management emphasize the importance of identifying and analyzing the people, groups, and organizations that could impact the project, including their expectations, to develop appropriate strategies to effectively engage stakeholders in project decisions. NNSA program stakeholders have not been consistently involved throughout the planning and implementation process, in part, because NNSA does not have a process for engaging with stakeholders. Without fully engaging stakeholders during the planning and implementation process, NNSA may not have assurances that the financial data collected will meet stakeholder expectations and be useful to the agency.

Conclusions

NNSA has completed some steps to implement common financial reporting and is working on other steps. However, the agency is not fully pursuing the implementation of a common work breakdown structure, as required by the National Defense Authorization Act for Fiscal Year 2017. Without a common work breakdown structure, NNSA cannot be assured that it will have reliable financial data for the nuclear security enterprise that satisfies the needs of Congress and other stakeholders and addresses long-term deficiencies in its ability to report total costs of programs.

Furthermore, NNSA generally has not followed six leading project management practices in its approach to planning and implementing common financial reporting that may help NNSA successfully implement common financial reporting. Specifically, NNSA has not collected or documented requirements from stakeholders as part of its efforts to manage the scope of common financial reporting. Without collecting and documenting specific and detailed requirements, NNSA may not meet the needs of stakeholders or successfully implement the effort. NNSA also has not produced a detailed project schedule for implementing common

financial reporting. Without a detailed project schedule, NNSA risks not understanding its progress toward completing the project, may be limited in its ability to accurately report status information to Congress, and will have less assurance the effort will be complete by December 2020, as required. NNSA has not established a budget for its common financial reporting effort. Without a budget, NNSA will not have assurances that costs can be controlled and monitored throughout the implementation of common financial reporting or that the project will have sufficient resources to achieve its scope and schedule. Further, NNSA has not collected or reported total project costs. Without a method to collect and report information on these costs, NNSA will not have assurances that the cost information it is required to provide to Congress is accurate, and NNSA cannot compare its budget for the project to actual costs to assess how the project is performing. Moreover, NNSA has not formally documented risks or planned how to address risks related to implementing common financial reporting. Without engaging in risk management, NNSA may not be able to mitigate negative risks that could lead to such problems as delays, cost overruns, or performance shortfalls. Finally, NNSA does not have a process in place to engage with all stakeholders of the common financial reporting effort. Without fully engaging stakeholders, the agency may not have the assurances that financial data collected through the effort will meet stakeholder expectations.

Recommendations for Executive Action

We are making the following seven recommendations to NNSA:

The NNSA Administrator should implement a common work breakdown structure across NNSA program offices in the nuclear security enterprise, standardized at a high level to allow for program office customization but also to allow for the collection of total program costs. (Recommendation 1)

The Program Director for Financial Integration should collect and document requirements to define project scope and meet project objectives. These requirements should be updated periodically throughout the life of the project. (Recommendation 2)

The Program Director for Financial Integration should develop a detailed project schedule. The detailed schedule should be documented as part of

the annual report to Congress required in the National Defense Authorization Act for Fiscal Year 2017. (Recommendation 3)

The Program Director for Financial Integration should develop a project budget that includes information on the human resources needed to implement common financial reporting. (Recommendation 4)

The Program Director for Financial Integration should develop a method to collect and report information on the costs associated with implementing common financial reporting. (Recommendation 5)

The Program Director for Financial Integration should develop a formal process to identify risks, document those risks, and plan how to minimize risk exposure. (Recommendation 6)

The Program Director for Financial Integration should develop an approach to effectively engage with all project stakeholders that incorporates their expectations into project decisions. (Recommendation 7)

Agency Comments

We provided a draft of this report to NNSA for comment. The agency provided written comments, which are reproduced in appendix I; the agency also provided technical comments that we incorporated in the report as appropriate. Of the seven recommendations, NNSA generally agreed with six and neither agreed nor disagreed with one.

Regarding our recommendation that NNSA implement a common work breakdown structure across NNSA program offices, the agency neither agreed nor disagreed with the recommendation. NNSA stated that it would continue to use their current approach, while focusing on enhancing analysis and reporting to provide comparative data across the enterprise. Once this is completed, NNSA will assess the effectiveness of the approach and evaluate what changes, if any, are necessary to the work breakdown structures to meet the overarching objectives of common financial reporting. While we are encouraged that NNSA will further assess and evaluate their effort, we strongly encourage the agency to implement a common work breakdown structure for improved data across the nuclear security enterprise.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Energy, the Administrator of NNSA, and other interested parties. In addition, this report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-3841 or bawdena@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made significant contributions to this report are listed in appendix II.

A handwritten signature in black ink, appearing to read "Allison Bawden". The signature is fluid and cursive, with the first name "Allison" written in a larger, more prominent script than the last name "Bawden".

Allison Bawden
Director, Natural Resources and Environment

List of Committees

The Honorable James M. Inhofe
Chairman

The Honorable Jack Reed
Ranking Member
Committee on Armed Services
United States Senate

The Honorable Lamar Alexander
Chairman

The Honorable Dianne Feinstein
Ranking Member
Subcommittee on Energy and Water Development
Committee on Appropriations
United States Senate

The Honorable Adam Smith
Chairman

The Honorable Mac Thornberry
Ranking Member
Committee on Armed Services
House of Representatives

The Honorable Marcy Kaptur
Chairwoman

The Honorable Mike Simpson
Ranking Member
Subcommittee on Energy and Water Development
Committee on Appropriations
House of Representatives

Appendix I: Comments from the National Nuclear Security Administration

**Appendix I: Comments from the National
Nuclear Security Administration**



Department of Energy
Under Secretary for Nuclear Security
Administrator, National Nuclear Security Administration
Washington, DC 20585



January 18, 2019

Ms. Allison B. Bawden
Director, Natural Resources
and Environment
U.S. Government Accountability Office
Washington, DC 20548

Ms. Bawden:

Thank you for the opportunity to review the Government Accountability Office (GAO) draft report "National Nuclear Security Administration: Additional Actions Needed to Collect Common Financial Data" (GAO-19-101). The National Nuclear Security Administration (NNSA) appreciates the positive recognition by GAO of our success in consolidating business systems at Y-12 and Pantex. We have also made extraordinary progress over the last 12 months in our efforts to integrate financial data. Most notably, we finalized a common cost structure and data elements for all NNSA programs, sites, laboratories and plants, and have collected fiscal year 2018 data for the substantial majority of these entities, with the remaining to be soon completed.

As noted in the report, after careful consideration of the results of a Lean Six Sigma Team, stakeholder inputs, and all available data, NNSA selected an approach for financial integration that leverages existing data, using a common cost structure to meet the core objectives of the National Defense Authorization Act requirement. NNSA has followed leading practices for project management, to the extent practicable and applicable, recognizing that this is primarily a data management and reporting initiative, and not a traditional capital asset or IT acquisition project from which most best-practices are derived. We have, however, fully considered the recommendations and agree there are opportunities to further enhance documentation of these practices.

The attached management decision identifies the detailed actions planned and taken in regards to GAO's recommendations. Our subject matter experts have also separately provided technical and general comments for your consideration to enhance the clarity and accuracy of the report. If you have any questions about this response, please contact Dean Childs, Director, Audits and Internal Affairs, at (301) 903-1341.

Sincerely,

Lisa E. Gordon-Hagerty

Enclosure



Enclosure

NATIONAL NUCLEAR SECURITY ADMINISTRATION

Response to Report Recommendations

"National Nuclear Security Administration: Additional Actions Needed to Collect
Common Financial Data" (GAO-19-101)

The Government Accountability Office recommends NNSA:

Recommendation 1: Implement a common work breakdown structure across NNSA program offices in the nuclear security enterprise, standardized at a high level to allow for program office customization but also to allow for accurate collection of total program costs.

Management Response: As noted in the report, after careful consideration of the results of a Lean Six Sigma Team, stakeholder inputs, and all available data, NNSA selected an approach for financial integration that leverages existing data, using a common cost structure to meet the core objectives of the 2014 and 2017 National Defense Authorization Act (NDAA) requirements. Through this cost effective approach, we have successfully established common cost elements among all NNSA programs, field organizations, and Management and Operating contractors (M&O), and have for the first time begun collecting financial integration data across the enterprise. Our plans are to collect financial integration data for fiscal years 2018 and 2019 using our current approach, while focusing on enhancing analysis and reporting to provide comparative data across the enterprise, consistent with the stated purpose in the Joint Explanatory Statement accompanying the 2014 NDAA. Once these efforts are completed, NNSA will assess the effectiveness of our approach, and evaluate what changes, if any, are necessary to the work breakdown structure (WBS) to meet the overarching objectives of financial integration.

Recommendation 2: Collect and document requirements to define project scope and meet project objectives. These requirements should be updated periodically throughout the life of the project.

Management Response: The Financial Integration initiative is an externally directed activity. As such, the overarching requirements are established in the FY 2014 NDAA. NNSA has further evaluated and documented internal implementation and user requirements in various forms throughout the initiative including the Lean Six Sigma Team report, annual reports provided to Congress, and results of Financial Integration Executive Committee (ExCom) meetings and decisions. It is also important to recognize that this is primarily an effort to align and collect existing data, not a project to implement a new system or re-define an accounting structure or methodology. As such, the scope of the internal data requirements are not as broad as in those more comprehensive systems implementation or modification efforts. We will, however, prepare a centralized document summarizing both external scope, and internal implementation and user, requirements as appropriate. This will be completed by April 1, 2019.

Recommendation 3: Develop a detailed project schedule. The detailed schedule should be documented as part of the annual report to Congress required in the National Defense Authorization Act for Fiscal Year 2017.

Management Response: NNSA has developed and maintained a project schedule throughout the initiative. This schedule is included in annual plans, and we have updated Congressional stakeholders on a periodic basis on progress and adjustments to the schedule. While we agree having a general schedule to guide the plan for the initiative is and has been important, it must also be considered that the milestones and actions for this data alignment and consolidation effort are not as varied and complex as in a project to implement a new system or re-define a cost accounting methodology, for example. We will, however, provide more detail on the project plan and schedule as appropriate. This will be completed by April 1, 2019.

Recommendation 4: Develop a project budget that includes information on the human resources needed to implement common financial reporting.

Management Response: Based on the NNSA's financial integration approach that leverages existing data to create a common cost structure (in lieu of a more elaborate and costly system replacement or implementation effort), the cost of the effort is largely comprised of sunk cost. This includes salaries of existing employees to work jointly and cooperatively across the enterprise to identify requirements, develop and agree on a consistent cost reporting structure, and participate in efforts to capture, reconcile, and validate the accuracy and reliability of the data. Other than a few employees who have been assigned full time to this effort, the majority of the cost would be some fraction of the annual salary from the many employees supporting this effort. For this reason, NNSA does not budget for resources in a traditional analysis of Full Time Equivalents (FTE) manner, but instead defines the actions required to implement financial integration, and requests each site to evaluate whether it has the bandwidth to accommodate the integration activities. For Federal entities that means assessing allocation of existing employees' time, while for contractors that also means evaluating resources allocated to financial integration versus prior data analysis and collection activities that have been discontinued.

It is also important to note that the financial integration initiative is in its fourth year, and the most costly efforts have already been completed. Establishing a reliable and verifiable system to capture the fractions of employees' time and cost dedicated to the financial integration initiative would not be practical or cost beneficial. NNSA will, however, prepare a more refined estimate of future cost that provides greater detail on how the estimate was developed, including assumptions and limitations. This will be completed by April 1, 2019.

Recommendation 5: Develop a method to collect and report information on the costs associated with implementing common financial reporting.

Management Response: As noted in recommendation 4 above, establishing a reliable and verifiable system to capture the fractions of employees' time and cost dedicated to

the financial integration initiative would not be practical or cost beneficial. NNSA will, however, prepare a more refined estimate of future cost that provides greater detail on how the estimate was developed, including assumptions and limitations. While our M&Os may also have an ability to segregate costs specifically dedicated to the FI initiative, this cost would have to be offset by the cost avoidance achieved from elimination or consolidation of other reporting requirements that has been a bi-product of this effort. We will also identify any areas where costs or allocation of resources clearly exceeded estimates due to schedule or scope changes. This will be completed by April 1, 2019.

Recommendation 6: Develop a formal process to identify risks, document those risks, and plan how to minimize risk exposure.

Management Response: NNSA has informally evaluated and considered risk as the financial integration initiative has matured. The most significant of these risks have been previously captured and reported as challenges in the annual report to Congress. Going forward, NNSA will more clearly and fully document these as key risks and mitigation strategies. This will be completed by April 1, 2019.

Recommendation 7: Develop an approach to effectively engage with all project stakeholders that incorporates their expectations into project decisions.

Management Response: From inception, NNSA has and will continue to involve all stakeholders in the financial integration initiative. Through the initial Lean Six Sigma initiative, we engaged stakeholders throughout the enterprise to evaluate the NDAA mandate, and provide options and recommendations to address the requirements. We now have monthly meetings with all DOE stakeholders, quarterly meetings with M&Os, and semi-annual meetings at the EXCOM level. In addition, we regularly brief the Office of Management and Budget and Congressional staff. Finally, all M&Os and NNSA program, field, and functional offices contributed to, and approved, our current approach to collecting financial integration data. We will continue to effectively engage all stakeholders, recognizing that this is an external mandate, requiring tradeoffs and tough decisions to achieve common cost reporting. Most importantly, we will better identify and document how NNSA and M&O staff will benefit from analyzing financial integration data. While not every organization or individual in the enterprise will have 100 percent of their requirements or desires met through this initiative, we acknowledge that we can always do more to engage our stakeholders.

Appendix II: GAO Contact and Staff Acknowledgments

GAO Contact

Allison B. Bawden, (202) 512-3841 or bawdena@gao.gov

Staff Acknowledgments

In addition to the individual named above, key contributors to this report included Hilary Benedict (Assistant Director), Kevin Bray, Cindy Gilbert, Amanda K. Mullan, Michael Holland, Michael LaForge, Elizabeth Luke, Beverly Peterson, Holly Sasso, and Sheryl Stein.

Appendix III: Accessible Data

Data Tables

Accessible Data for Figure 2: National Nuclear Security Administration's (NNSA) Methods for Collecting Financial Data from Management and Operating (M&O) Contractors

1. M&O contractors capture financial data in their business systems.

- Kansas City
- Los Alamos
- Lawrence Livermore
- Nevada
- Pantex
- Sandia
- Savannah River
- Y-12

2. Crosswalks

Each M&O contractor collects financial data differently but must submit data to NNSA in a common format and structure. As a result, M&O contractors create crosswalks to each NNSA program office using that office's format and structure.

3. DOE & program offices

M&O contractors submit crosswalked financial data to the different program management systems of each of the program offices or suboffices. High-level financial data is also submitted to DOE's STARS.

Accessible Data for Figure 4: NNSA's Common Financial Reporting Data Management Process, as of November 2018

Data for Charts

1. Preparation

The M&O contractors extract data from their site business systems and prepare their submissions to be in the format requested by NNSA.

M&O contractors

Site Business Systems

- Kansas City
- Los Alamos
- Lawrence Livermore
- Nevada
- Pantex
- Sandia
- Savannah River
- Y-12

2. Submission

The M&O contractors submit the data to NNSA in CostEx. The data are stored in DOE's integrated data warehouse.

Contractor Data Submission

3. Validation

The data are validated to ensure they are in the format requested by NNSA. The data are rejected if they are not provided in the correct format.

Data

Validation

4. Reconciliation

The data are reconciled with STARS to ensure the total amount and the B&R codes match. The data are rejected if they do not reconcile with STARS.

Data

Reconciliation

5. Publication

Once the data have been validated and reconciled, they are published in the integrated data warehouse via CostEx for reporting, analysis, and extraction to other NNSA program office systems.

Data Publication

Reports

Dashboards

Program Systems

B&R: Budget and Reporting

DOE: Department of Energy

M&O: management and operating

NNSA: National Nuclear Security Administration

STARS: Standard Accounting and Reporting System

Source: NNSA documents and interviews. | GAO-19-101

Accessible Data for Figure 5: National Nuclear Security Administration's (NNSA) Management of the Plutonium Sustainment Program and Its Infrastructure

Office of Defense Programs

Work Breakdown Structure Elements

Office of Defense Programs Total Cost for Plutonium Sustainment =
Pit Manufacturing & Production +
Lawrence Livermore Design Agency Activities & Other Program Activities
+
Non-Nuclear Pit Component Manufacturing +
Power Supply Manufacturing Capability +
Los Alamos Landlord Cost Recovery +
Los Alamos Program & Production Management +
Plutonium Experimental Device Fabrication +
Management Reserves +
Life Extension Program Support +
Corporate Reserves +
Other – Plutonium Sustainment Activities
Plutonium Sustainment Program
Office of Safety, Infrastructure, and Operations Work Breakdown
Structure Elements
UNKNOWN: Office of Safety, Infrastructure, and Operations Total Cost
for Plutonium Sustainment
≠
Plutonium Facility 4 at Los Alamos National Laboratory +
Chemistry and Metallurgy Research Facility at Los Alamos National
Laboratory +

Radiological Laboratory Utility Office Building at Los Alamos National Laboratory +

Superblock at Lawrence Livermore National Laboratory +

As a result...?

NNSA cannot determine total program costs for the Plutonium Sustainment Program

Why

The Office of Safety, Infrastructure, and Operations cannot determine program costs associated with the Plutonium Sustainment Program because each facility may be used for multiple programs.

Plutonium Sustainment Program

Provides a plutonium-based component manufacturing capability at reliable capacities to sustain a safe, secure, and effective nuclear deterrent. The program provides the equipment and personnel necessary to fabricate plutonium pits, qualify and certify produced pits for stockpile use, and manufacture precision plutonium devices for science-related evaluation.

Agency Comment Letter

Accessible Text for Appendix I: Comments from the National Nuclear Security Administration

Page 1

Ms. Allison B. Bawden

Director, Natural Resources and Environment

U.S. Government Accountability Office

Washington, DC 20548

Ms. Bawden:

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Sincerely,

Lisa E. Gordon-Hagerty

Enclosure

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NATIONAL NUCLEAR SECURITY ADMINISTRATION

Response to Report Recommendations

“National Nuclear Security Administration: Additional Actions Needed to Collect Common Financial Data” (GAO-19-101)

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Page 3

Recommendation 3: Develop a detailed project schedule. The detailed schedule should be documented as part of the annual report to Congress required in the National Defense Authorization Act for Fiscal Year 2017.

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Page 4

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