November 2016

PROGRAM MANAGEMENT

DOE Needs to Develop a Comprehensive Policy and Training Program

GAO Highlights

PROGRAM MANAGEMENT

DOE Needs to Develop a Comprehensive Policy and Training Program

Why GAO Did This Study

Program managers are an important part of the federal government's workforce. They interact with project managers to provide support and guidance on individual projects but also must take a broad view of program objectives and organizational culture. NNSA, a separately organized agency within DOE, is responsible for managing DOE's nuclear security missions. Since 1990, DOE's management of major contracts and projects, including those executed by NNSA, has been on GAO's list of areas at high risk for fraud, waste, abuse, and mismanagement. DOE and NNSA have undertaken steps to address these challenges but have focused primarily on project management issues.

Senate Report 114-49 includes a provision for GAO to review NNSA program management capabilities. This report examines the extent to which DOE and NNSA have established (1) policies addressing internal control standards and leading practices related to program management and (2) training programs for program managers. GAO reviewed DOE and NNSA policies, consulted internal control and PMI standards, and interviewed DOE and NNSA officials.

What GAO Recommends

GAO recommends that DOE establish (1) a program management policy addressing internal control standards and leading practices and (2) a training program for program managers. DOE had no comments on a draft of this report.

View GAO-17-51. For more information, contact David Trimble at (202) 512-3841 or trimbled@gao.gov.

What GAO Found

The Department of Energy (DOE) and the National Nuclear Security Administration (NNSA) have not established policies addressing internal control standards and leading practices related to program management. There are no federal government-wide standards specifically addressing program management. However, federal internal control standards include principles that are relevant to key roles such as program managers, and the Project Management Institute (PMI) has established a standard on program management that is generally recognized as a leading practice for most programs. Specifically, internal control standards state that management should assign responsibilities, delegate authority, and establish expectations of competence for key roles such as program managers. According to leading practices, organizations develop program plans, capture and understand stakeholder needs, and establish processes for maintaining program management oversight, among other activities. DOE has not established a department-wide program management policy, and NNSA cancelled its program management policy in 2013 without establishing a new one. A policy incorporating key internal control standards and leading program management practices may help ensure that DOE and NNSA program offices are better able to achieve their missions, goals, and objectives. For example, in a 2016 report examining NNSA's plans to build a plutonium analysis facility, GAO found that the agency had not clarified whether the project would satisfy the mission needs of other NNSA and DOE programs. NNSA might have been better able to clarify this project's mission needs if DOE and NNSA had been operating under a DOE-wide program management policy incorporating leading practices. DOE and NNSA officials said that they recognize the importance of establishing a program management policy, but DOE has not taken steps to do so.

DOE and NNSA have not established training programs for program managers. According to federal internal control standards, management should train key staff to enable them to develop competencies appropriate for key roles, which would include program managers. In addition, according to PMI, a successful program manager exhibits certain core competences, such as leveraging a strong working knowledge of the principles and process of both program and project management. NNSA's cancelled program management policy also required the agency to develop standardized training materials for program managers and track the training requirements for each program manager position. However, according to DOE officials, the department has not developed a training program for program managers. In contrast, DOE has developed a training program for project managers and established an office responsible for managing this program and certifying the qualifications of DOE and NNSA project managers. NNSA officials said that they were unsure if NNSA had ever developed training materials for program managers and that the agency does not track the training requirements for its program manager positions. Of the 15 NNSA program managers GAO interviewed, only five individuals stated that they had received training related to program management. In the absence of a training program for program managers, NNSA may have difficulty developing and maintaining a cadre of professional, effective, and capable program managers.

_____

United States Government Accountability Office

Contents

Abbreviations

DNN	Office of Defense Nuclear Nonproliferation
DOE	Department of Energy
DP	Office of Defense Programs
NNSA	National Nuclear Security Administration
PMI	Project Management Institute, Inc.

November 21, 2016

Congressional Committees

Program managers play a key role in the federal government by managing programs and overseeing contracts to help agencies get what they need, at the right time, and at a reasonable price. The role of a program manager is separate and distinct from that of a project manager. According to the Project Management Institute, Inc. (PMI), a program manager interacts with project managers to provide support and guidance on individual projects but also must take a broad view of program objectives and organizational culture and processes.[1] More broadly, program management helps ensure that a group of related projects, subprograms, and program activities are managed in a coordinated way to obtain benefits not available from managing them individually. PMI has established a standard on program management that is generally recognized as a leading practice for most programs.[2] In contrast, there are no federal government-wide standards specifically addressing program management.[3] However, federal internal control standards include principles that are relevant to key roles such as program managers.[4] For example, according to federal internal control standards, management should assign responsibilities and delegate authority to achieve the entity's objectives, as well as demonstrate a commitment to develop competent individuals.

---

[1]PMI 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.

[2]See Project Management Institute, Inc., *The Standard for Program Management®*, Third Edition (Newtown Square, PA: 2013).

[3]Two bills have been introduced in the current Congress that would require the Office of Management and Budget to adopt and oversee government-wide standards, policies, and guidelines specifically addressing program management. See S. 1550 (2015) and H.R. 2144 (2015).

[4]Internal control comprises the plans, methods, policies, and procedures used to fulfill the mission, strategic plan, goals, and objectives of an entity. See GAO, *Standards for Internal Control in the Federal Government*, GAO-14-704G (Washington, D.C.: September 2014).

The Department of Energy (DOE) oversees a broad range of programs related to nuclear security, science, energy, and nuclear waste cleanup, among other missions. The National Nuclear Security Administration (NNSA), a separately organized agency within DOE, is responsible for managing DOE's nuclear security missions, which include ensuring a safe, secure, and reliable nuclear deterrent; achieving designated reductions in the nuclear weapons stockpile; and supporting the nation's nuclear nonproliferation efforts. To support these missions, NNSA is organized into program offices, which include Defense Programs (DP) and Defense Nuclear Nonproliferation (DNN).[5] Each of these offices oversees numerous programs—such as the B61-12 Life Extension Program and the U.S. Plutonium Disposition Program—that often involve the design and construction of large projects to meet program needs.[6]

Since 1990, DOE's management of major contracts and projects, including those executed by NNSA, has been on our list of areas at high risk for fraud, waste, abuse, and mismanagement.[7] To address these long-standing challenges, DOE and NNSA have undertaken a number of activities such as revising DOE's project management order and strengthening training courses and certification requirements for project managers. However, these efforts are focused primarily on project management, not program management. For example, as we found in November 2014, DOE's cost estimating guidance and requirements do not apply to programs (including programs with project-like

---

[5]NNSA's other program offices include Naval Reactors; Emergency Operations; Safety, Infrastructure and Operations; Defense Nuclear Security; and Counterterrorism and Counterproliferation.

[6]Life extension programs entail refurbishing or replacing weapon components to extend the lives of weapons and may also enhance safety and security characteristics of weapons. The B61-12 Life Extension Program plans to consolidate four of the five versions of the B61 legacy bombs into a single weapon known as the B61-12. The U.S. Plutonium Disposition Program is intended to dispose of 34 metric tons of surplus, weapon-grade plutonium.

[7]Major contracts and projects are those with values of $750 million or greater. We designated DOE contract management as a high-risk area in 1990, and, in 2013, we narrowed the focus of the high-risk designation for DOE to the major contracts and projects of DOE's Office of Environmental Management and NNSA. GAO, *High-Risk Series: An Update,* GAO-13-283 (Washington, D.C.: Feb. 14, 2013).

characteristics).[8] We concluded in our report that without a requirement for conducting reviews of programs, neither DOE nor NNSA has appropriate internal controls to assess the quality of program performance over time.

In this context, a Senate Report accompanying a bill for the National Defense Authorization Act for Fiscal Year 2016 included a provision for us to review NNSA's program management capabilities.[9] Because DOE's policies apply to NNSA operations, we also reviewed DOE's program management capabilities. This report examines the extent to which DOE and NNSA have established (1) policies addressing internal control standards and leading practices related to program management and (2) training programs for program managers.

To conduct this work, we reviewed DOE and NNSA directives (i.e., orders, guides, and policy letters), as well as directives established by DP and DNN. We focused on these two NNSA offices because they accounted for the majority of NNSA's fiscal year 2016 budget. We interviewed officials from DOE's Office of Management and Office of Project Management Oversight and Assessments, as well as from NNSA's Office of the Administrator, Office of Management and Budget, and Office of Acquisition and Project Management. We also interviewed 15 program managers from a nonprobability sample of DP and DNN programs. We selected these programs on the basis of a number of factors, including the size of the program (in terms of its funding level) and the organizational location of the program. In general, we tried to select larger programs as well as programs managed by different offices within DP and DNN. We excluded from our sample programs on which we had ongoing or recently completed audit work. Because this was a nonprobability sample, we are not able to generalize our findings to all NNSA programs, but our review of these programs is illustrative.

To examine the extent to which DOE and NNSA have established policies addressing internal control standards and leading practices related to

---

[8]GAO, *Project and Program Management: DOE Needs to Revise Requirements and Guidance for Cost Estimating and Related Reviews*, GAO-15-29 (Washington, D.C.: Nov 25, 2014).

[9]S. Rep. No. 114-49, at 331-2 (2015).

program management, we compared DOE and NNSA directives with federal standards for internal control and PMI's standard for program management. Specifically, we reviewed DOE and NNSA directives to determine the extent to which they addressed internal control principles associated with an organization's control environment and the five areas of program management work described by PMI: program strategy alignment, program benefits management, program stakeholder engagement, program governance, and program life cycle management.

To examine the extent to which DOE and NNSA have established training programs for program managers, we compared DOE and NNSA directives with federal internal control standards and PMI's standard for program management. Specifically, we reviewed DOE and NNSA directives to determine the extent to which they addressed internal control principles associated with an organization's control environment and PMI's description of core competencies for program managers. In addition, to determine the applicability of federal acquisition career development requirements to the training of program managers, we reviewed Office of Management and Budget policies and interviewed officials from the Federal Acquisition Institute and Department of Defense's Office of the Under Secretary of Defense for Acquisition, Technology and Logistics.[10]

We conducted this performance audit from November 2015 to November 2016 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.

---

[10]For example, we reviewed Office of Management and Budget, Policy Letter 05-01, *Developing and Managing the Acquisition Workforce* (Washington, D.C.: Apr. 15, 2005). The Federal Acquisition Institute, established under the Office of Federal Procurement Policy Act, facilitates and promotes career development and strategic human capital management for the federal acquisition workforce.

Background

This section describes (1) DOE directives and NNSA policy letters, (2) federal internal control standards related to program managers, and (3) leading practices related to program management.

DOE Directives and NNSA Policy Letters

According to DOE's Departmental Directives Program order, directives are DOE's primary means to set, communicate, and institutionalize policies, requirements, responsibilities, and procedures for departmental elements (including NNSA) and contractors.[11] DOE classifies its directives into several types, including orders and guides, which DOE describes as follows:

- **Orders.** Orders establish management objectives, requirements, and assignment of responsibilities for DOE federal employees.[12]
- **Guides.** Guides provide information on acceptable means for complying with requirements contained in orders. They are a voluntary means for complying with these requirements and cannot be made mandatory by reference in other DOE directives.

Under the National Nuclear Security Administration Act, the Secretary of Energy is responsible for establishing policy for NNSA.[13] The NNSA Administrator, however, has authority over, and is responsible for, programs and activities of NNSA, including policy development and guidance, as well as program management and direction.[14] The act further provides that the NNSA Administrator has the authority to establish NNSA-specific policies, unless disapproved by the Secretary of Energy.[15] NNSA establishes its policies through the issuance of policy

---

[11]Department of Energy, *Departmental Directives Program*, Order 251.1C (Washington, D.C.: Jan. 15, 2009).

[12]Orders can also include requirements relevant to DOE contractors, and these requirements would be included as an attachment to an order.

[13]Pub. L. No. 106-65, § 3203(a)(1999)(codified at 42 U.S.C. § 7144(a)).

[14]Pub. L. No. 106-65, § 3212(b)(codified at 50 U.S.C. § 2402(b). The Undersecretary for Nuclear Security of the Department of Energy serves as the NNSA Administrator.

[15]Pub. L. No. 106-65, § 3212(d)(codified at 50 U.S.C. § 2402(d)).

letters.[16] These policy letters take the form of NNSA policies, supplemental directives, and business operating procedures.

Federal Internal Control Standards Related to Program Managers

The program manager plays an important role in implementing an effective internal control system. According to federal standards for internal control, management should take a number of actions targeting key roles such as program managers.[17] For example, management should assign responsibility and delegate authority to key roles to achieve the entity's objectives. Specifically, management considers the overall responsibilities assigned to each unit, determines what key roles are needed to fulfill the assigned responsibilities, and establishes the key roles. Management also determines what level of authority each key role needs to fulfill a responsibility.

Federal standards for internal control also state that management should demonstrate a commitment to develop competent individuals. Important attributes associated with this internal control principle are applicable to program managers and described as follows:

- **Establishing expectations of competence.** Management establishes expectations of competence for key roles, and other roles at management's discretion, to help the entity achieve its objectives. Competence is the qualification to carry out assigned responsibilities. It requires relevant knowledge, skills, and abilities, which are gained largely from professional experience, training, and certifications. It is demonstrated by the behavior of individuals as they carry out their responsibilities. Personnel need to possess and maintain a level of competence that allows them to accomplish their assigned responsibilities.

- **Training personnel.** Management develops competent personnel to achieve the entity's objectives. In particular, management considers the training of its personnel to enable individuals to develop competencies appropriate for key roles, reinforce standards of conduct, and tailor training based on the needs of the role.

---

[16]See NNSA, Supplemental Directive 251.1, *Policy Letters: NNSA Policies, Supplemental Directives, and Business Operating Procedures* (Washington, D.C.: Oct. 7, 2013).

[17]GAO-14-704G.

Leading Practices Related to Program Management

PMI defines program management as the application of knowledge, skills, tools, and techniques to a program to meet the program requirements and to obtain benefits and control not available by managing projects individually. Program management involves aligning multiple components to achieve the program goals and allows for optimized or integrated cost, schedule, and effort. According to PMI's standard, which describes leading program management practices, the work associated with program management is characterized by the following five areas of activity.[18]

- **Program strategy alignment**—identifying opportunities and benefits to achieve the organization's strategic objectives through program implementation.

- **Program benefits management**—defining, creating, maximizing, delivering, and sustaining the benefits provided by the program.

- **Program stakeholder engagement**—capturing and understanding stakeholder needs, desires, and expectations and analyzing the impact of the program on stakeholders, gaining and maintaining stakeholder support, managing stakeholder communications, and mitigating/channeling stakeholder resistance.

- **Program governance**—establishing processes and procedures for maintaining program management oversight and decision making support for applicable policies and practices throughout the course of the program.

- **Program life cycle management**—managing all the program activities related to program definition, program benefits delivery, and program closure.

Each of the five areas encompasses a number of different practices. For example, developing a program plan is an important component of program strategy alignment. According to PMI's standard, the program plan formally expresses the organization's concept, vision, mission, and benefits expected to be produced by the program. The program plan also defines program-specific goals and objectives and provides authority for subprograms, projects, and related activities, as well as the framework by which these program components will be managed and monitored during

---

[18]*The Standard for Program Management®.*

the course of the program. The program plan is the overall documented reference by which the program will measure its success throughout its duration and should include the metrics for success, a method for measurement, and a clear definition of success.

As PMI's definition of program management indicates, program and project management, while distinct disciplines, are inextricably linked. For example, according to PMI's standard, essential program management responsibilities are linked to project management responsibilities and include identifying and controlling interdependencies between projects, addressing escalated issues among the projects that comprise the program, and tracking the contribution of each project and the non-project work to the consolidated program benefits. In addition, according to a 2015 report by a panel of the National Academy of Public Administration, effective program management depends on effective project management, which itself depends on a cadre of professionals including not only project managers, but also an array of technical specialties and disciplines within the project and program management profession, such as requirements development, cost and schedule estimation, and risk management.[19]

DOE and NNSA Have Not Established Policies Addressing Internal Control Standards or Leading Practices Related to Program Management

DOE has not established a department-wide policy addressing internal control standards or leading practices related to program management, and NNSA canceled its program management policy in 2013. As described earlier, according to federal internal control standards, management should assign responsibilities, delegate authority, and establish expectations of competence for key roles, which would include program managers. In addition, according to PMI's standard describing program management leading practices, work associated with program management should address several areas of activity, such as strategy alignment, which involves developing program plans, and program governance, which involves establishing procedures for managing oversight of programs.

---

[19]Peter Marshall, Dan Chenok, and Joseph Wholey, *White Paper by a Panel of the National Academy of Public Administration: Improving Program Management in the Federal Government*, sponsored by the Project Management Institute (Washington, D.C.: July 2015).

According to DOE officials, however, DOE has not established any policies specifically related to program management, and no office within the department is responsible for developing such policies. In addition, on the basis of our review of DOE directives, we were unable to identify any policies directly addressing internal control standards related to assigning responsibilities, authority, or expectations of competence to program managers, or addressing leading program management practices. However, we identified a 2005 DOE order that, while not establishing a DOE-wide policy on program management, directed NNSA to manage its programs in accordance with NNSA's own program management policy.[20] Specifically, NNSA had established its policy for conducting program management activities in 2004.[21] The policy defined "program" as a group of ongoing activities and related projects conducted with a defined set of resources and managed in a coordinated way to achieve mission objectives and obtain benefits not available from managing them individually. It stated that NNSA viewed programs as falling across a spectrum that ranged from operational programs (such as surveillance of the nuclear weapons stockpile) at one end to major capital acquisition projects at the other end. The policy stated that the diversity of NNSA's programs demanded a tailored application of program management principles to accommodate the requirements of each program. NNSA's policy required that program management responsibilities and authorities be defined in writing and that program managers meet certain expectations of competence, such as demonstrating a practical understanding of key NNSA and organizational business and management practices.

NNSA's policy, however, provided only general guidelines for conducting program management activities and stated that NNSA's deputy and associate administrator offices were responsible for determining how to apply program management principles within their organizations.

---

[20]Department of Energy, *Management of the Department of Energy Nuclear Weapons Complex*, Order 452.3 (Washington, D.C.: June 8, 2005). DOE recently issued a draft order to replace this order: Department of Energy, *Management of the Department of Energy Nuclear Security Enterprise*, Order 452.3A, draft (Washington, D.C.: June 6, 2016).

[21]National Nuclear Security Administration, *NNSA Program Management Policy*, Business Operating Procedure 006.001 (Washington, D.C.: Aug. 12, 2004). NNSA cancelled this policy in 2013.

Accordingly, DP and DNN issued their own program management policies in 2005.[22] Among other things, the policies described each office's framework for managing its programs, roles and responsibilities of program managers and other members of the program management team, and expectations of competence for program managers. For example, DNN's policy described 10 program management functions, such as developing and validating requirements and developing program plans. In particular, according to DNN's policy, each assistant deputy administrator in DNN was to develop a program management plan that would establish and clearly document operational policies, procedures, guidelines, and processes; describe the programmatic work already accomplished; and describe the work to be accomplished over the life of the program. In addition, program managers were responsible for preparing a program execution plan on an annual basis to provide detailed guidance to program staff for implementing the coming fiscal year's work scope. DNN's policy also described 29 specific responsibilities of program managers, as well as qualification and training requirements for them.

NNSA cancelled its agency-wide program management policy in 2013 but did not establish a new policy that addresses key internal control standards or leading practices related to program management. According to NNSA officials and documentation, NNSA canceled its policy at the request of DP, which had updated its own 2005 program management policy and found the 2004 NNSA policy to be outdated. However, NNSA officials told us that they did not know why NNSA did not revise its 2004 policy or address the impact of its cancellation on NNSA's program offices. NNSA officials noted that other NNSA-wide polices exist related to planning, work authorization, and contractor oversight, and that these policies address elements of program management, such as

---

[22]National Nuclear Security Administration, *NA-10 Defense Programs – Program Management Manual* (Washington, D.C.: Nov. 18, 2005); and National Nuclear Security Administration, *Defense Nuclear Nonproliferation Programs (NA-20): Program Management Manual* (Washington, D.C.: Mar. 11, 2005). DP officials were unable to provide us with a copy of the original 2005 document; as a result, we relied on information in a 2010 revision of the manual.

requiring programs to develop annual implementation plans.[23] However, these policies do not comprehensively address key internal control standards, such as assigning responsibility, delegating authority, and establishing expectations of competence, or leading program management practices, such as strategy alignment and developing program plans.

Without a department-wide policy on program management, NNSA's program offices may not be managing their programs in accordance with internal control standards or leading practices related to program management. For example, DNN officials told us that they do not currently have a program management policy, as their organization's 2005 policy became outdated and fell out of use around 2010. They said that they expect to establish a new program management policy by the end of 2016 but did not provide us with a draft copy to review. As a result, it is unclear what principles and practices DNN currently follows in managing its programs. In contrast, DP has revised its program management policy multiple times since issuing its original policy in 2005. DP's most recent policy, issued in January 2016,[24] defines the term "program,"[25] establishes four categories of program management and execution requirements for these categories,[26] and defines the activities that program managers must perform to meet those requirements, among other things. However, DP's policy does not fully address internal control standards related to program management. Specifically, DP's policy does

---

[23]National Nuclear Security Administration, *Planning, Programming, Budgeting and Evaluation (PPBE) Process*, Business Operating Procedure 001 (Washington, D.C.: Nov. 8, 2011); National Nuclear Security Administration, *Work Authorizations*, Supplemental Directive 412.1, draft (Washington, D.C.: May 20, 2014); and National Nuclear Security Administration, *Transformational Governance and Oversight*, Policy 21 (Washington, D.C.: Feb. 28, 2011).

[24]National Nuclear Security Administration, *DP Program Execution Instruction: NA-10 Program Management Tools and Processes* (Washington, D.C.: Jan. 14, 2016).

[25]According to DP's policy, "program" refers to any grouping of activities and projects that are being managed collectively, in a coordinated way, to achieve mission objectives and obtain benefits not available from managing them individually.

[26]DP's policy identifies four program management categories: capital acquisition management; enhanced management A (i.e., for an activity requiring a Selective Acquisition Report to Congress); enhanced management B (i.e., for a program that requires additional rigor to ensure requirements are met); and standard management (i.e., for all activities that do not fall under the other three categories).

not address expectations of competence for its program managers, unlike earlier versions of its policy.[27]

Establishing a clear, department-wide program management policy that incorporates key internal control standards and leading program management practices may help ensure that DOE and NNSA program offices are better able to achieve their missions, goals, and objectives. For example, in our 2016 report examining NNSA's plans to build a multi-billion-dollar facility for plutonium analysis at its Los Alamos site in New Mexico, we found that the agency had not clarified whether the project would satisfy the mission needs of DOE and NNSA programs other than those of DP.[28] In addition, in a 2014 DOE report reviewing NNSA's plans to build a multi-billion-dollar facility for uranium manufacturing at its Oak Ridge site in Tennessee, DOE's review team recommended that NNSA create an overarching uranium mission strategy and a position within DP (referred to by NNSA as the Uranium Program Manager) to take ownership of NNSA's overall uranium mission.[29] NNSA might have been better able to clarify the mission needs associated with these projects if NNSA and DOE programs had been operating under a department-wide policy that incorporated (1) leading practices, such as capturing and understanding stakeholder needs and expectations and other activities associated with program stakeholder engagement, and (2) internal control principles related to assigning responsibilities and delegating authority to key roles such as program managers.

DOE and NNSA officials told us that they recognize the importance of establishing a program management policy. However, DOE has not taken steps to develop a policy for program management. In contrast, DOE has

---

[27]According to NNSA officials, DP is developing a training certification program for its program managers, and DP expects to begin implementation of this program in fiscal year 2017.

[28]GAO, *DOE Project Management: NNSA Needs to Clarify Requirements for Its Plutonium Analysis Project at Los Alamos,* GAO-16-585 (Washington, D.C.: Aug. 9, 2016). We recommended that NNSA update the program requirements in a key project document to clarify whether the project will provide plutonium analysis equipment to meet the needs of DOE and NNSA programs other than those in DP.

[29]Department of Energy, Oak Ridge National Laboratory, *Final Report of the Committee to Recommend Alternatives to the Uranium Processing Facility Plan in Meeting the Nation's Enriched Uranium Strategy* (Oak Ridge, TN: Apr. 15, 2014).

established an office and a department-wide policy dedicated to project management. Specifically, in July 2015, DOE established the Office of Project Management Oversight and Assessments as the department's central management organization providing leadership and assistance in developing and implementing DOE-wide policies, procedures, programs, and management systems pertaining to project management. In particular, this office is responsible for DOE's order on project management for the acquisition of capital assets, which establishes requirements for the development of project plans, responsibilities and authorities of project managers, and expectations of competence for project managers, among other things.[30]

DOE and NNSA Have Not Established Training Programs for Program Managers

DOE and NNSA have not established training programs for program managers to ensure that they are capable of meeting core competencies; as a result, most of the 15 NNSA program managers we interviewed had not received training related to program management. According to federal internal control standards and the PMI standard for program management, to promote the development of a competent workforce, agencies should ensure that their program managers are properly trained. Specifically, according to federal internal control standards, management should train staff to enable them to develop competencies appropriate for key roles and reinforce standards of conduct. According to the PMI standard, a successful program manager exhibits certain core competences, including the ability to

- manage details while taking a holistic, benefits-focused view of the program;

- leverage a strong working knowledge of the principles and process of both program and project management;

- interact seamlessly and collaboratively with governance boards and other executive stakeholders;

- establish productive and collaborative relationships with team members and their organizational stakeholders;

---

[30]Department of Energy, *Program and Project Management for the Acquisition of Capital Assets*, Order 413.3B Chg 2 (Washington, D.C.: May 12, 2016).

- leverage their own technical knowledge and experience to provide perspectives that support the understanding and management of program uncertainty, ambiguity, and complexity; and

- facilitate understanding through the use of exceptionally strong communication skills.

However, according to DOE officials, the department does not have an office responsible for program management that provides training for program managers. In contrast, DOE has established a training program for project managers. The Project Management Career Development Program is responsible for defining necessary project management knowledge, skills, and abilities; project management training requirements; a career development tracking system; and a project management certification program. In addition, DOE's Office of Project Management Oversight and Assessments is responsible for managing this program and ensuring that all DOE project managers (referred to as federal project directors) are certified according to the requirements of the program, as well as for tracking the development of staff certified under the program. According to DOE officials, classes offered by the Project Management Career Development Program are also open to program managers.[31] However, DOE officials said that the department had no plans to modify its project management program to address program management as well.

NNSA had plans to establish a training program for its program managers but has not done so. According to its cancelled 2004 policy on program management, NNSA was to develop (1) standardized training materials that would demonstrate a program manager's understanding of and proficiency with core NNSA processes and management practices and (2) a database to track the training and certification requirements for each program manager position.[32] However, NNSA officials said that because of the loss of senior managers and other staff, they were unsure if these training materials were ever developed. Furthermore, they said that NNSA does not currently track information on the training and certification of program managers in a database. DP officials told us that they are

---

[31]According to NNSA officials, within NNSA, certain Project Management Career Development Program courses are centrally funded and available to its federal workforce.

[32]National Nuclear Security Administration, Business Operating Procedure 006.001.

developing a training certification program for program managers that covers staff in four areas: systems engineering, program management, research and development, and budget analysis. However, requirements associated with this training program would apply only to DP staff.

In August 2016, after our close-out meeting with NNSA and DOE, NNSA officials told us that NNSA has included program and project management in its "foundational competency model," which consists of competencies universal to the NNSA workforce. NNSA officials said that they are establishing skill proficiency levels, as well as developmental activities aligned with those proficiency levels, and that they expect to implement this model for the NNSA workforce during calendar year 2016 using PMI and other benchmarks. However, we were unable to review this model to determine its relevance to program management competencies.

In the absence of a current DOE or NNSA training program for program managers, most of the NNSA program managers we interviewed did not have training related to program management. As a result, NNSA may have difficulty developing and maintaining a cadre of professional, effective, and capable program managers. Specifically, of the 15 NNSA program managers we interviewed, 5 told us that they had received training related to program management: 4 had taken training from the Defense Acquisition University, and 1 stated that she had taken two courses related to program management (although she did not indicate which organization provided this training).[33] The remaining 10 program managers told us that they had not received training related to program management. Five of these individuals told us that they had taken training related to project management from DOE and/or PMI. However, the remaining 5 individuals told us that they had not received any training related to program or project management.

---

[33]As required by the Defense Acquisition Workforce Improvement Act, the Secretary of Defense establishes and maintains the Defense Acquisition University to provide training for its acquisition workforce. (See 10 U.S.C. § 1746.)

Conclusions

DOE has undertaken a number of activities in recent years related to strengthening the management of its projects. However, the department has not maintained a similar focus and level of effort regarding program management, which is an important ingredient in an organization's ability to effectively manage related projects and activities. Specifically, DOE has not established a program management policy addressing key federal internal control standards, such as assigning responsibility, delegating authority, and establishing expectation of competence, or leading program management practices, such as strategy alignment and the development of program plans. DOE's 2005 policy regarding NNSA's management of the nuclear security enterprise directs NNSA to manage its programs in accordance with its own policy; however, NNSA cancelled its own program management policy in 2013, and its existing policies do not address internal control standards or leading practices related to program management. DP currently has in place a program management policy for its organization, but its policy does not fully address internal control standards. DNN's program management policy fell out of use around 2010, and DNN has not replaced it, which makes it unclear what principles and practices DNN currently follows in managing its programs. Establishing a clear, department-wide program management policy that incorporates key internal control standards and leading practices related to program management may help ensure that DOE and NNSA program offices are better able to achieve their missions, goals, and objectives. DOE and NNSA officials told us that they recognize the importance of establishing a policy on program management but have not taken steps to develop such a policy. In addition, although federal internal control standards call for management to train its personnel to enable them to develop competencies appropriate for key roles, DOE and NNSA have not established training programs for program managers. Without a department-wide training program for program managers, NNSA may have difficulty developing and maintaining a cadre of professional, effective, and capable program managers.

Recommendations for Executive Action

To help ensure that NNSA effectively manages the performance of its programs, we recommend that the Secretary of Energy establish a program management policy that (1) assigns responsibilities and delegates authority to program managers and establishes expectations of competence for them, in accordance with federal internal control standards, and (2) addresses leading program management practices, such as developing program plans.

To help ensure that NNSA develops and maintains a cadre of professional, effective, and capable program managers in accordance with leading program management practices and federal internal control standards, we recommend that the Secretary of Energy establish a training program for program managers.

Agency Comments and Our Evaluation

We provided a draft of this report to DOE and NNSA for their review and comment. DOE had no comments on the draft report, and NNSA provided technical comments, which we incorporated as appropriate.

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 members have any questions about this report, please contact me at (202) 512-3841 or trimbled@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 the report are listed in the appendix.

David C. Trimble
Director, Natural Resources and Environment

The Honorable John McCain
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 Mac Thornberry
Chairman
The Honorable Adam Smith
Ranking Member
Committee on Armed Services
House of Representatives

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

Appendix: GAO Contact and Staff Acknowledgments

GAO Contact	David C. Trimble, (202) 512-3841 or trimbled@gao.gov
Staff Acknowledgments	In addition to the contact named above, Diane LoFaro (Assistant Director), Diantha Garms, and Jason Holliday made key contributions to this report. Also contributing to this report were Cheryl Andrew, Richard Burkard, Greg Campbell, Pamela Davidson, and Lisa Pearson.