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DEFENSE SCIENCE AND TECHNOLOGY

Further DOD and DOE Actions Needed to Provide Timely Conference Decisions and Analyze Risks from Changes in Participation

Revised 3/13/15 to correct the Highlights and page 16. The corrected sentence on the Highlights reads: At DOE, a Sandia National Laboratories official estimated that Sandia attendance at a key conference declined by about half from 2011 through 2013. The corrected sentence on page 16 reads: An official from Sandia National Laboratories estimated its attendance at the Materials Research Society's annual fall conference declined from 45 participants in 2011 to 23 participants in 2013.

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March 2015

DEFENSE SCIENCE AND TECHNOLOGY

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GAO Highlights

Highlights of GAO-15-278, a report to congressional committees

Why GAO Did This Study

To help fulfill DOD's and DOE's S&T missions, including mitigating emerging threats, the departments' scientists attend conferences. In May 2012, OMB directed agencies, among other things, to establish senior-level review processes for all hosted or attended conferences exceeding specific cost thresholds. DOD and DOE implemented conference policies in 2012, with subsequent updates, to comply with OMB's requirements.

GAO was mandated to review the effects of OMB's requirements on DOD's and DOE's S&T missions. Among other things, this report (1) examines S&T conference participation changes since policy implementation, and examines the extent to which DOD and DOE (2) face and have mitigated implementation challenges, and (3) have identified risks from conference participation changes and analyzed them for any potential effects. GAO reviewed conference policies, and interviewed and surveyed conference management and S&T officials from principal research labs. Survey results were not generalizable.

What GAO Recommends

GAO recommends that DOD and DOE (1) establish time frames for providing conference request decisions and (2) develop a plan to analyze and periodically reevaluate risks from conference participation changes. DOD partially concurred with the first recommendation, stating it will collect and analyze data to implement further solutions. GAO still believes the recommendation is valid, as discussed in the report. DOD concurred with the second recommendation and DOE concurred with both recommendations.

View GAO-15-278. For more information, contact Johana Ayers at (202) 512-5741 or ayersj@gao.gov, or John Neumann at (202) 512-3841 or neumannj@gao.gov.

What GAO Found

Department of Defense (DOD) and Department of Energy (DOE) officials cited reduced attendance at science and technology (S&T) conferences by scientists and engineers since DOD and DOE implemented their conference policies. These policies, responding to Office of Management and Budget (OMB) requirements, established processes for senior-level review and approval of conference requests based on department-wide cost thresholds. Following policy implementation, DOD's Army Research Laboratory officials stated that conference attendance by personnel decreased from about 1,300 attendees in 2011 to about 100 attendees in 2013. At DOE, a Sandia National Laboratories official estimated that Sandia attendance at a key conference declined by about half from 2011 through 2013. DOD and DOE officials noted other factors that may have affected conference attendance, such as OMB's mandatory reduction in travel, and sequestration.

The length of DOD's and DOE's conference review and approval processes, which has increased since implementing their policies, poses a challenge to timely decision making about conference requests that DOD and DOE have yet to fully mitigate. Information provided by DOD and DOE officials indicates the length of their conference review and approval processes has increased from a period of weeks to as much as 9 months after implementing their policies, in part, due to the multiple levels of review required. As a result, DOD and DOE officials stated that approval decisions are often not made until close to the start of a conference, which creates a disincentive for the departments' scientists and engineers to take on active roles, such as presenting research or serving as a keynote speaker, and may lead to increased registration or travel costs. DOD and DOE have taken steps to streamline aspects of their review and approval processes, but these efforts have not always provided conference request decisions in a time frame that meets applicants' needs. In particular, DOD and DOE have not established time frames for providing decisions based on applicants' needs. Federal internal control standards state that as agencies strive to improve their processes, management must assure that information is communicated in a time frame that helps those who need it to carry out their responsibilities. Until DOD and DOE establish these time frames, scientists and engineers will continue to face uncertainty over whether they can commit to more active roles at a conference or take advantage of discounted registration fees.

DOD and DOE officials have identified and communicated risks associated with changes in conference participation, but have not analyzed these risks for any potential effects on their departments' S&T missions. Identified risks include a potential decline in the quality of scientific research, difficulty in recruiting and retaining qualified scientists and engineers, and a diminished leadership role for DOD and DOE within the global S&T community. However, GAO found that DOD and DOE officials have not developed a plan to analyze the risks for any potential effects to achieving the departments' S&T missions or to periodically reevaluate these risks consistent with federal internal control standards. Without developing a plan to analyze and periodically reevaluate these risks, it will be difficult for DOD and DOE to manage any potential effects from these risks on their ability to achieve their S&T missions.

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Abbreviations

DARPA	Defense Advanced Research Projects Agency
DCMO	Deputy Chief Management Officer
DOD	Department of Defense
DOE	Department of Energy
labs	laboratories
NNSA	National Nuclear Security Administration
NSTC	National Science and Technology Council
OMB	Office of Management and Budget
OSTP	Office of Science and Technology Policy
S&T	science and technology

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U.S. GOVERNMENT ACCOUNTABILITY OFFICE
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Congressional Committees

The United States depends on science, technology, and engineering to help protect the American people, advance national interests, and prepare to meet the challenges of an uncertain future. The defense science and technology (S&T) enterprise includes more than 129,000 scientists, engineers, and personnel across organizations under the Department of Defense (DOD) and its component services and agencies, and the Department of Energy's (DOE) National Nuclear Security Administration (NNSA).[1] The missions of the defense S&T enterprise include mitigating existing or emerging threats, developing new technologies to deter U.S. adversaries, managing and securing the nation's nuclear weapons, and preventing the spread of nuclear weapons and related technology.

DOD and DOE scientists and engineers attend S&T conferences each year as part of their efforts to expand their knowledge and help them fulfill their missions.[2] In addition, DOD and DOE, like other executive branch agencies, sponsor conferences as well as allow personnel to attend conferences sponsored by other organizations to help personnel be more effective in their jobs. For those in the defense S&T enterprise, conference participation can promote communication with peers in other U.S. agencies and academia, as well as those from other countries. In addition, this communication helps to provide leadership across an array of individual technical fields, ensure the technical quality of research, and recruit new scientists and engineers to work in the defense laboratories (labs), among other purposes. Members of Congress as well as White House, DOD, and DOE officials have noted the importance of conference participation for the defense S&T enterprise. For example, a February 2014 memorandum from the Under Secretary of Defense for Acquisition,

[1]Congress created NNSA as a semi-autonomous agency within DOE under title 32 of the National Defense Authorization Act for Fiscal Year 2000. Pub. L. No. 106-65, § 3211 (1999).

[2]A "conference" is defined in the Federal Travel Regulation as a "meeting, retreat, seminar, symposium, or event that involves attendee travel." The term "conference" also applies to training activities that are considered to be conferences under federal regulation (41 C.F.R. § 300-3.1).

Technology and Logistics stated that S&T conferences are potentially beneficial for scientists and engineers to remain technically competent and develop professionally in their field.[3]

Over the past several years, multiple Inspectors General have reported on excessive costs for conferences sponsored by certain executive branch agencies.[4] In November 2011, the President signed an executive order that cited the need for federal agencies to ensure efficient spending on conferences and other activities.[5] To this end, the Office of Management and Budget (OMB) issued a memorandum in May 2012 directing executive branch agencies to establish a review and approval process for all future conferences where net expenses by the agency would exceed $100,000 and to annually report on agency-sponsored conferences with net expenses to the agency exceeding $100,000, among other things.[6] To implement the requirements of OMB's May 2012 memorandum, DOD and DOE issued and later updated policies to review conference participation.[7] However, since DOD and DOE implemented these policies, some members of Congress and White House, DOD, and DOE officials have expressed concerns about the policies' potential effects on the defense S&T enterprise's ability to successfully complete its missions. For example, an August 2013 memo from the Director of the White House Office of Science and Technology Policy (OSTP) stated that reductions in the ability of federal scientists and engineers to attend S&T conferences would, if continued, encourage the best scientists and

[3]Under Secretary of Defense for Acquisition, Technology and Logistics, *Participation in Technical and Industry Conferences*, Memorandum (Washington, D.C.: Feb. 24, 2014).

[4]For example, U.S. General Services Administration, Office of Inspector General, Office of Investigations, *Management Deficiency Report: General Services Administration Public Buildings Service, 2010 Western Regions Conference* (Apr. 2, 2012); and U.S. Department of Justice, Office of the Inspector General, Audit Division, *Audit of Department of Justice Conference Planning and Food and Beverage Costs*, Audit Report 11-43 (October 2011).

[5]White House, Executive Order 13589, *Promoting Efficient Spending*, 76 Fed. Reg. 70,861 (Nov. 9, 2011).

[6]Office of Management and Budget, *Promoting Efficient Spending to Support Agency Operations*, Memorandum M-12-12 (May 11, 2012).

[7]See Department of Defense, Deputy Chief Management Officer, *Implementation of Updated Conference Oversight Requirements*, Memorandum (Nov. 6, 2013); and Department of Energy, *Improving Efficiency of the Conference Approval Process*, Memorandum for the Secretary (Dec. 31, 2013).

engineers to leave federal service, ultimately degrading the overall quality of the workforce and its research, and diminishing the capabilities of the federal labs.[8]

The Senate report accompanying a bill for the National Defense Authorization Act for Fiscal Year 2014 mandated that we review the effects of conference policy implementation on the defense S&T enterprise, to include DOD and DOE's NNSA.[9] In this report, we (1) assess whether the DOD and DOE conference policies address OMB requirements, and identify any costs associated with implementing these policies; (2) examine any changes in S&T conference participation since DOD and DOE implemented their conference policies; (3) examine the extent to which DOD and DOE have faced and mitigated any challenges resulting from conference policy implementation; and (4) examine the extent to which DOD and DOE have identified the risks from changes in conference participation and analyzed these risks for any potential effects.

To address these objectives, the scope of our work included the S&T enterprises of DOD and DOE's NNSA. Specifically, within DOD, we selected and reviewed the principal research labs operated by each military department, including the Army Research Laboratory, Naval Research Laboratory, and the Air Force Research Laboratory. At DOE, we selected and focused on NNSA and its three national labs, Lawrence Livermore National Laboratory, Los Alamos National Laboratory, and Sandia National Laboratories. The information we obtained from these selected labs is not generalizable to all DOD and DOE S&T components, but provides illustrative context from the experiences of this subset of organizations that are a part of the defense S&T enterprise. We also reviewed DOD and DOE entities responsible for overseeing conference management at the department level.

To assess whether the DOD and DOE conference policies address OMB's requirements, and to identify any costs associated with

[8]National Science and Technology Council, *Implementation of Federal Travel and Conference Policies with Respect to Scientific and Technical Conferences,* Memorandum for National Science and Technology Council Committees and Subcommittees (Aug. 5, 2013). OSTP provides administrative support to the National Science and Technology Council.

[9]S. Rep. No. 113-44, at 68 (2013).

implementing these policies, we reviewed documents, including conference policies and implementing guidance for DOD, for each of the military departments, DOE, and NNSA. For DOD, we reviewed information included in our January 2014 report, in which we assessed the extent to which DOD's conference policy was consistent with OMB requirements, and determined whether there was any change in DOD's policy since we last reported on it.[10] For DOE, we assessed DOE's conference policy against the elements specified in OMB's May 2012 memorandum. Further, we interviewed DOD and DOE officials across multiple departmental and S&T organizations about DOD's and DOE's policies. To identify the costs associated with implementing the conference policies, we requested information on any relevant implementation costs. The agencies generally could not provide complete cost data, as discussed in this report. However, we obtained examples of implementation costs during interviews with DOD, DOE, and OSTP officials. We reviewed the sources of these examples with the officials and found the information sufficiently reliable for purposes of discussing possible implementation costs.

To examine any changes in S&T conference participation since DOD and DOE implemented their conference policies, we requested conference attendance data from the six labs selected for our review for 1 year prior to implementation of the agencies' conference policies in 2012 through the first quarter of fiscal year 2014, the most recent full quarter available at the time of our request. The agencies generally could not provide us with complete conference attendance data. However, we interviewed DOD and DOE officials, including conference managers and S&T program managers, to obtain their perspectives on changes in conference participation and reviewed the sources of those examples with the officials, although we did not independently verify the reliability of the data provided in these examples. We determined that this information was sufficient for the purposes of illustrating agency officials' opinions about changes in conference participation. We also spoke with OSTP officials about the availability of conference attendance data. Further, we interviewed representatives from five professional societies that both sponsor conferences and had the largest numbers of conference publications by DOD and DOE scientists and engineers from 2004

[10]GAO, *Defense Management: DOD's Conference Policy Is Generally Consistent with OMB's Requirements*, GAO-14-150 (Washington, D.C.: Jan. 21, 2014).

through 2013 to corroborate DOD and DOE officials' statements on changes in conference participation. The information we obtained from the representatives of these five professional societies is not generalizable to all professional societies, but provides illustrative context from the experiences of this subset of societies.

To address our objectives regarding the extent to which DOD and DOE have faced and mitigated any challenges related to implementing their conference policies, and identified any risks from changes in conference participation and analyzed their potential effects, we conducted 34 interviews that included 141 DOD and DOE officials across multiple departmental and S&T organizations about these issues, and conducted a content analysis of these interviews. Based on this analysis, we enumerated challenges and mitigation strategies as well as benefits identified as being at risk due to changes in overall conference participation mentioned during these interviews. We then shared these lists with 44 conference manager and S&T program manager officials whom we selected based on their roles and responsibilities. We asked these officials to add any additional challenges and risks that may exist to ensure our lists were comprehensive. Following this, we then sent a survey to this same subset of officials, asking respondents to rate the effect of each potential mitigation strategy and prioritize steps for implementing the strategies. We received responses from 31 of the 44 officials who received the survey. The information we obtained from this survey is not generalizable to all DOD and DOE conference management and S&T program manager officials, but provides insights from this subset of officials who have roles and responsibilities related to their agency's conference requests. Further, we reviewed relevant documentation on DOD and DOE efforts to mitigate conference policy implementation challenges, including studies and proposed guidance. We also interviewed DOD, DOE, and OSTP officials and representatives from five professional societies that both sponsor conferences and had the largest numbers of conference publications by DOD and DOE scientists and engineers from 2004 through 2013 to obtain additional information on the benefits that may be at risk from changes in conference participation. Finally, we compared DOD's and DOE's efforts to mitigate any identified challenges and to analyze any potential effects from changes in conference participation against practices described in the *Standards for*

Internal Control in the Federal Government.[11] We provide additional information about our scope and methodology in appendix I.

We conducted this performance audit from February 2014 to March 2015 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

DOD's and DOE's Science and Technology Missions

As part of its mission to protect U.S. interests, DOD's strategic guidance includes a commitment to apply all elements of U.S. national power to address security challenges.[12] One such element is DOD's S&T-related research efforts, which include basic research, applied research, and advanced technology development.[13] DOD's S&T research is conducted under the auspices of the Office of the Assistant Secretary of Defense for Research and Engineering. This office provides technical leadership and oversight of the various DOD components that have S&T research investments—known as the DOD S&T enterprise. This enterprise comprises numerous research labs and defense agencies, including the three principal research labs operated by the military departments: the Army Research Laboratory, Naval Research Laboratory, and Air Force Research Laboratory. S&T research efforts at DOD are diverse, ranging from computing sciences to sensor development for air and space

[11]GAO, *Standards for Internal Control in the Federal Government*, GAO/AIMD-00-21.3.1 (Washington, D.C.: Nov. 1999).

[12]DOD, *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense* (Washington, D.C.: Jan. 2012).

[13]Basic research is systematic study directed toward greater knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications toward processes or products in mind. Applied research is systematic study to gain knowledge or understanding necessary to determine the means by which a recognized and specific need may be met. Advanced technology development includes all efforts that have moved into the development and integration of hardware for field experiments and tests.

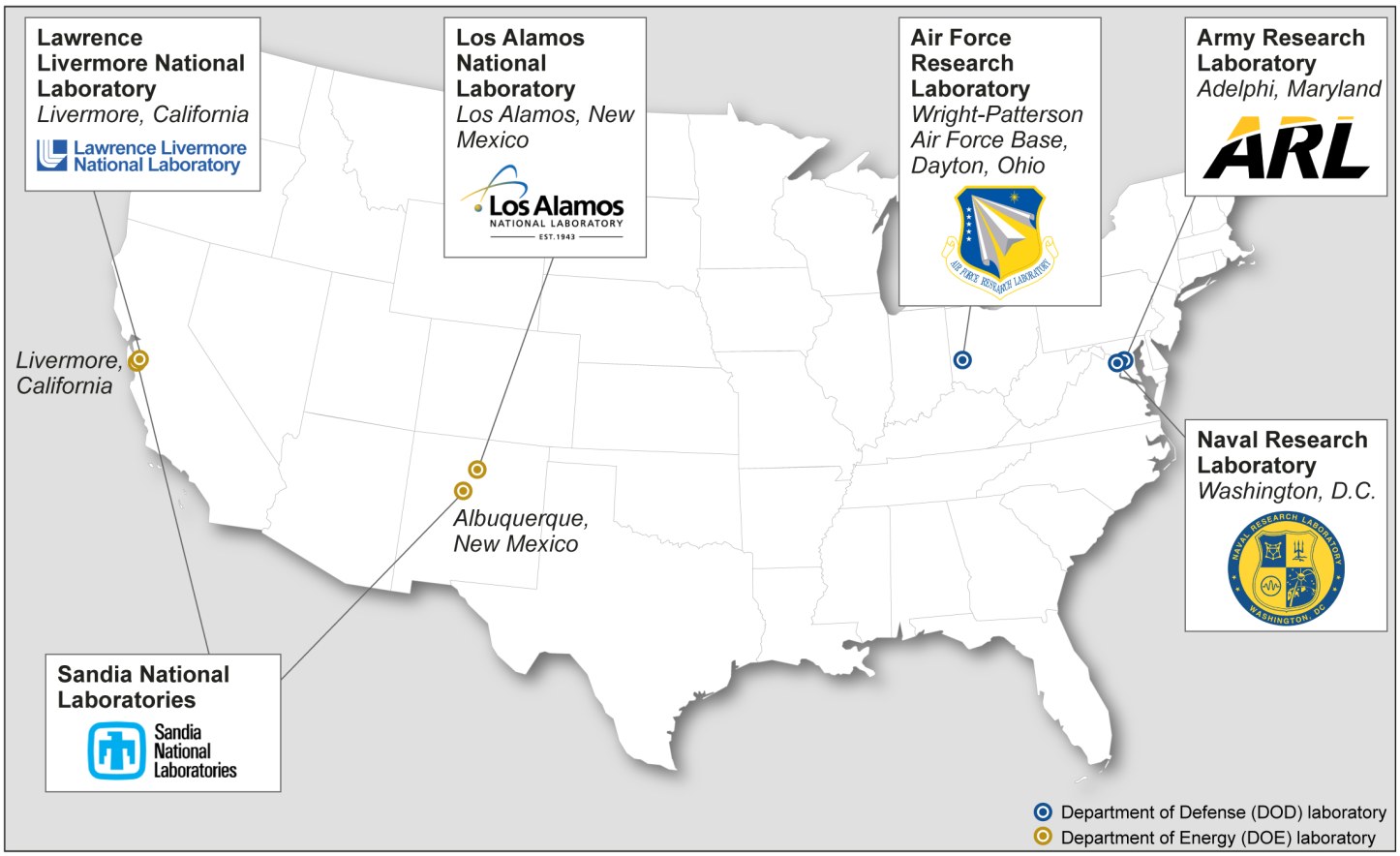
reconnaissance to medical research for protecting the health of military personnel. In its entirety, the DOD S&T enterprise employs approximately 100,000 scientists and engineers and, according to DOD budget data, received appropriations of about $12 billion in fiscal year 2014.

DOE also has a mission to promote U.S. security by using S&T efforts to address energy, environmental, and nuclear challenges. To help execute this mission, DOE's NNSA is responsible for maintaining and enhancing the safety, reliability, and performance of the nation's nuclear weapons, among other responsibilities.[14] NNSA is responsible for overseeing a network of sites and national labs to implement DOE's nuclear security mission. NNSA's national labs include Lawrence Livermore National Laboratory, Los Alamos National Laboratory, and Sandia National Laboratories.[15] S&T research efforts at these labs range from nuclear weapon sustainment to laser technologies. The three NNSA labs employ approximately 29,400 people, including scientists and engineers, and, according to DOE budget data, received an appropriation of about $4.8 billion in fiscal year 2014. Figure 1 shows the location of the DOD and DOE's NNSA labs included in our review.

[14]See 50 U.S.C. § 2401(b).

[15]Sandia National Laboratories includes two labs, one in Livermore, California, and one in Albuquerque, New Mexico.

Figure 1: Selected Department of Defense and Department of Energy's National Nuclear Security Administration Laboratories



Source: GAO analysis of DOD and DOE documents (data); Map Resources (map). | GAO-15-278

To help support their missions as part of the defense S&T enterprise, DOD and DOE's NNSA sponsor or send personnel to a variety of conferences that bring together a broad range of scientists and engineers to present scientific results, discuss technologies, and expand collaboration in scientific research. Conferences can be organized and sponsored by federal agencies or by members of a broader S&T

community.[16] According to the National Academy of Sciences, conferences provide a venue for researchers to collaborate with others in their technical fields by bringing together large concentrations of researchers, and allow for access to the newest research findings, which may not be published in scientific journals in a timely fashion.[17]

OMB Memorandum on Reviewing, Approving, and Reporting Conference Costs

OMB's May 2012 memorandum outlines a series of requirements to ensure that federal funds are used appropriately on all conference-related activities, including S&T conferences, and that executive branch agencies reduce spending on conferences when practicable.[18] According to OMB's memorandum, agencies should ensure that conference attendance and costs are limited to the levels required to carry out their assigned mission. The memorandum's requirements include a Deputy Secretary-level review and approval of conferences with a net expense to the agency of more than $100,000.[19] The memorandum further prohibits costs in excess of $500,000 on a single conference without a signed waiver from the head of the respective agency, such as the Secretary of Defense or Energy. Finally, the memorandum requires each executive agency to report annually on the expenses for agency-sponsored conferences exceeding $100,000 and identifies specific reporting requirements for

[16]For the purposes of this report, "S&T community" includes academia, private industry, and professional societies that also conduct S&T research and organize and participate in S&T conferences. Conferences organized and sponsored by the S&T community may consist of multiple programs representing different technical fields that include lectures, poster sessions, and special sessions for speakers presenting their research.

[17]National Academy of Sciences, National Research Council, *Strategic Engagement in Global S&T: Opportunities for Defense Research* (Washington, D.C.: 2014).

[18]See OMB Memorandum M-12-12. The memorandum characterizes conference activities that must be reviewed by agencies as conferences sponsored by the reviewing agency and conferences sponsored by other federal or nonfederal entities. For purposes of this report, we are referring to conferences sponsored by the reviewing agency as DOD- and DOE-sponsored and to conferences sponsored by other federal or nonfederal entities as non-DOD- and non-DOE-sponsored, respectively.

[19]Under OMB's memorandum, conference expenses include all direct and indirect costs paid by agencies or reimbursed by agencies for a conference, except for funds paid under federal grants to grantees. The memorandum states that conference expenses should be net of any fees or revenue received by the agency through the conference, as well as certain other excluded costs.

these conferences.[20] In response, both DOD and DOE issued interim guidance and memorandums in 2012 and 2013, and both departments issued updated policies late in 2013 that remain in effect.

Following its May 2012 memorandum, OMB also issued two controller alerts related to conference oversight, among other topics. The first controller alert, issued in May 2013, noted that conferences may play an important role in government operations to, for example, facilitate collaboration in the scientific community and provide an efficient means for presenting scientific findings.[21] At the same time, the alert noted that agencies should provide employees with guidelines on acceptable conference expenses and identified several best practices for agencies to consider. The second controller alert, issued in January 2015, stated that the Secretary- or Deputy Secretary-level reviews required by OMB's May 2012 memorandum could be delegated to a level deemed appropriate by these officials.[22] The alert noted that, by delegating the approval authority, agencies have found that the approver is more familiar with the subject of the conference. In addition, the alert suggested that, to prevent a lengthy and cumbersome review process that could hinder an agency's ability to carry out its mission in an efficient and effective manner, agencies should pre-approve known reoccurring conferences and attendance at non-government-sponsored conferences.

Subsequent to OMB's May 2012 memorandum, the Consolidated and Further Continuing Appropriations Act, 2013, established a requirement for executive branch agencies to notify their respective Inspector General of any agency-sponsored conference costing more than $20,000 within 15 days of the conference.[23] The notice must include the date and location of the conference, and the number of employees attending. The

[20]Specific reporting requirements include: the location, date, and total conference costs incurred by the agency for the conference; a brief explanation of how the conference advanced the mission of the agency; and the total number of individuals whose travel costs or other conference costs were paid by the agency.

[21]Office of Management and Budget, *Controller Alert: Travel and Conferences* (May 28, 2013).

[22]Office of Management and Budget, *Controller Alert: Travel and Conferences* (Jan. 2015).

[23]Pub. L. No. 113-6, § 3003(c), 127 Stat. 435 (2013). This requirement was also included in the Consolidated Appropriations Act, 2014. Pub. L. No. 113-76, § 742, 128 Stat. 242 (2014).

act also requires agencies to submit annual reports to the Inspector General or a senior ethics official regarding the costs and contracting procedures related to each conference that costs the government more than $100,000.

DOD and DOE Implemented Conference Policies Addressing OMB Requirements, and Officials Identified Some Associated Costs

DOD and DOE have implemented conference policies that address the requirements established in OMB's May 2012 memorandum to oversee conference spending. Officials also identified some costs associated with the implementation of these policies, such as costs related to staff time and information systems, but could not provide complete information on the implementation costs of these policies.

DOD and Military Department Conference Policies Address OMB's Requirements

In January 2014, we reviewed DOD's conference policy including how DOD implemented its policy and the extent to which the policy was consistent with OMB's requirements.[24] Based on discussions with DOD officials and our further review of DOD's policy, we determined that DOD's policy has not changed since we issued our January 2014 report, and that the DOD and military departments' conference policies address OMB's requirements.

DOD has a tiered review and approval structure in place to oversee conference spending that addresses the requirements established in OMB's May 2012 memorandum. Specifically, DOD's policy established three tiers for reviewing and approving conference spending requests. The total cost of the conference and whether it is DOD-sponsored or non-DOD-sponsored determines the review and approval tier. For example, a non-DOD-sponsored conference with total registration costs for attendees from the Departments of the Army, Navy, or Air Force over $100,000 must be reviewed and approved by the Secretary or Under Secretary of the particular military department. However, DOD-sponsored conferences costing between $100,000 and $500,000 can be reviewed and approved

[24]GAO-14-150.

by lower level officials, such as Commanders of Army and Air Force commands. DOD's tiered review and approval structure varies from OMB's 2012 memorandum by delegating the authority to (1) grant waivers for conferences costing greater than $500,000 to the Secretary or Under Secretary of each military department, rather than retaining the authority at the Secretary of Defense level, and (2) approve spending on conferences costing greater than $100,000 to lower levels than specified by OMB's requirements. According to DOD's policy, these variances were made with OMB's concurrence and stem from the department's unique size and complexity.[25]

Despite these variances, DOD's tiered review and approval structure includes provisions that exceed OMB's requirements in other respects. For example, DOD's policy calls for senior levels of review and approval of conferences costing less than $100,000, while OMB's May 2012 memorandum does not have such requirements. In addition, DOD's policy requires additional reporting on conference costs. Specifically, DOD requires quarterly internal reporting on conferences costing $20,000 or more, while OMB requires annual reporting on conferences costing more than $100,000. The details of DOD's tiered review and approval structure are described in greater detail in appendix II.

Within DOD, the Office of the Deputy Chief Management Officer (DCMO) is responsible for implementing DOD's conference policy, including issuing guidance and meeting reporting requirements. The DCMO also manages the DOD Conference Tool, a department-wide information system designed to track and report data on conference expenditures required by OMB, federal law, and DOD's policy.

In addition to the DOD-wide policy, each military department has issued and updated policies for overseeing conference spending that are consistent with DOD's policy. The military departments' policies generally require that applicants' conference attendance requests explain how attendance will further the department's mission and identify the cost, among other things. However, these conference policies vary because they establish different levels of delegated approval authority. For example, the Air Force delegated review and approval authority for Air Force-sponsored conferences under $100,000 and non-DOD-sponsored

[25]As stated, OMB's controller alert issued in January 2015 indicated that such delegations are permissible.

conferences under $20,000 from the Secretary of the Air Force and Under Secretary of the Air Force to the Commanders and Vice Commanders of Air Force major commands and components, such as the Air Force Materiel Command, which oversees the Air Force Research Laboratory. In contrast, the Secretary of the Navy retained review and approval authority for Navy-sponsored conferences with costs exceeding $500,000 and non-DOD-sponsored conferences with costs exceeding $100,000. Approval authority for Navy-sponsored conferences with costs up to $500,000 and non-DOD-sponsored conferences with costs up to $100,000 was delegated by the Secretary of the Navy to the Department of the Navy Assistant for Administration.[26]

DOE's Conference Policy Addresses OMB Requirements, and NNSA Follows DOE's Policy

DOE's conference policy, which covers NNSA, addresses the requirements in OMB's May 2012 memorandum. Under DOE's policy, the Secretary of Energy must grant a waiver for conferences costing $500,000 or more. The Deputy Secretary of Energy delegated review and approval authority for conferences with net costs between $100,000 and $500,000 to the Under Secretary level, which includes the Administrator of NNSA.[27] According to a DOE memorandum providing guidance on implementing the policy, delegating this authority would streamline the review and approval process without compromising its integrity.[28] DOE's Office of Management implements the conference policy, including issuing guidance and meeting reporting requirements, and manages DOE's Conference Management Tool, a department-wide information system designed to track and report conference expenditure data required by OMB and federal law.

According to DOE officials, NNSA follows DOE's conference policy and has not developed its own implementing policy or guidance. According to officials at the NNSA labs, the labs submit approval requests through the DOE Conference Management Tool, and each lab has its own process for tracking data on conference expenditures. Unlike DOD, DOE and

[26]The Department of the Navy Assistant for Administration provides administrative management and support to the Office of the Secretary of the Navy, its 6,000 member Secretariat, as well as staff offices and other organizations.

[27]The May 2012 OMB memorandum identifies the Deputy Secretary as the approval authority for conferences in this cost range.

[28]Department of Energy, *Improving Efficiency of the Conference Approval Process,* Memorandum for the Secretary (Dec. 31, 2013).

NNSA policies do not specify how to review and approve conference requests costing less than $100,000 and, according to officials, each lab has its own process for reviewing and approving conference costs less than $100,000. DOE officials emphasized that OMB's thresholds for senior-level review and approval of conference requests are based on costs department-wide and, therefore, would encompass scientists and engineers across all of DOE, not just at the three NNSA labs.

DOD and DOE Officials Identified Some Costs Associated with Implementing Their Conference Policies

While DOD and DOE do not maintain complete data on the costs of implementing their conference policies, officials from both departments identified some examples of such costs. Neither the DOD and DOE policies nor the OMB memorandum require the departments to gather and maintain data on costs to implement the conference policies. Since DOD and DOE could not provide complete data on costs before and after implementing their conference policies, we could not determine the extent to which the departments have incurred costs associated with implementing their policies.

DOD and DOE officials were able to identify examples of staff resource costs associated with implementing their conference policies. Specifically, Naval Research Laboratory officials told us that an internal survey covering October 1, 2013, to March 31, 2014, determined that more than 9,000 hours were spent on all conference oversight-related tasks, such as preparing and reviewing conference requests, and that the estimated cost of this time was about $824,000. Officials also noted that this cost estimate did not include the hours that higher-level review and approval authorities spent reviewing the Naval Research Laboratory's conference request packages. Similarly, DOE officials described examples of staff resource costs associated with implementing their conference policy. Los Alamos National Laboratory reported, in response to an April 2014 request for data by the National Science and Technology Council (NSTC), that annual spending for staff costs related to conference oversight increased from $0.2 million a year prior to the OMB May 2012 memorandum to $1.6 million in fiscal year 2013.[29]

[29]In April 2014, NSTC requested that federal departments and agencies provide data related to conference policy implementation, such as the amount of time for conference approval and costs associated with implementing the policies. Agencies provided some examples of the staff time or other costs associated with reviewing conference participation requests under their policies, but were not able to provide comprehensive data on how staff with different levels of experience were affected.

DOD and DOE officials also identified costs incurred to develop or procure information technology systems to collect and manage the data required as part of the DOD or DOE conference policies. Both DOD and DOE developed department-wide conference management systems to track conference expenditures, and some of the military departments and NNSA labs developed or modified their own systems. For example, Army officials estimated that the cost of deploying the Army Conference Reporting and Tracking Tool was about $658,000.[30] The officials described the tool as an online application designed to increase efficiency and decrease errors in the conference requesting and reporting process. They stated that, if used properly and to its fullest extent, the tool would reduce processing time for requesting and reporting data. Similarly, Los Alamos National Laboratory officials told us that the lab spent $708,500 to update an existing travel and expense management system to add functionality and a reporting capability in response to OMB requirements for reporting conference costs.

DOD, DOE, and Professional Societies Cited Examples of Changes in Participation since Implementing Conference Policies

DOD and DOE officials provided examples of changes in conference participation during the period since implementing the departments' policies to address OMB requirements. However, a lack of complete data and other factors, such as mandated budget reductions, do not allow us to determine whether any changes in conference participation can be directly attributed to changes in their conference policies. Specifically, officials from both departments cited reduced attendance and differing expectations for scientists' and engineers' roles at S&T conferences. DOD and DOE do not have data that would allow us to reliably compare attendance before and after implementing conference policies to address OMB's requirements as they are not required to maintain such data, but department officials provided examples of fewer scientists and engineers attending conferences, as well as other changes in how they participate at conferences. Professional society representatives also provided us with examples of reduced attendance at the S&T conferences they host. DOD and DOE officials also noted that other factors, such as sequestration, may have contributed to reduced attendance in recent years.

[30]The Army officials stated it is challenging to estimate a specific cost because the work conducted to deploy the Army Conference Reporting and Tracking Tool is part of an existing information technology contract that was also used for other information technology services. The information from this tool is used to compile information needed for entry into DOD's Conference Tool.

DOD and DOE Officials Cited Reduced Attendance by and Different Role Expectations for Scientists and Engineers as Changes in Conference Participation

DOD and DOE officials, in 27 of 34 interviews we conducted with them, cited reduced conference attendance since implementing the departments' conference policies. The officials provided several examples of decreased conference attendance in recent years, such as the following:

- Army Research Laboratory officials stated that conference attendance by its personnel decreased from approximately 1,300 attendees in 2011 to approximately 100 attendees in 2013.
- A Los Alamos National Laboratory official described a high-performance computing conference to which the lab historically sent about 100 researchers but received approval for 40 to attend in 2014.
- An official from Sandia National Laboratories estimated its attendance at the Materials Research Society's annual fall conference declined from 45 participants in 2011 to 23 participants in 2013.

Additionally, DOD and DOE officials in 12 of the 34 interviews we conducted—which included conference managers as well as scientists and engineers—stated that rejection of conference applications contributed to reduced attendance at S&T conferences. DOD and DOE conference management officials explained that under the departments' policies, conference requests are generally not denied in their entirety, but that the number of approved attendees for a particular conference may be less than what was requested. For example a conference management official at Los Alamos National Laboratory told us that 27 scientists from that lab requested to attend a 2014 American Nuclear Society conference but only 16 of the 27 were approved.

Prior to OMB's May 2012 memorandum, DOD and DOE collected some data on conference attendance but were not required to track, and thus did not collect, complete conference attendance data. While DOD and DOE have implemented information systems to track and report conference expenditures as part of their efforts to address OMB's requirements, the departments are not required to collect data on, for example, the number of individuals seeking approval and the number approved to attend conferences at all levels of cost, and do not use these information systems to do so. Moreover, these information systems do not include data related to other aspects of conference participation, such as whether the participants are speakers, as DOD and DOE are not required to collect such information. In addition, both the DOD and DOE Inspectors General recently issued reports that raised concerns about the

reliability of the conference participation data in the agencies' information systems, among other conference management issues.[31] Since the departments could not provide data on changes in their scientists' and engineers' conference attendance before and after OMB's May 2012 memorandum, we were unable to analyze any potential effects of the departments' policies on S&T conference attendance.

Representatives of professional societies responsible for sponsoring S&T conferences echoed DOD and DOE officials' examples of reduced conference attendance by DOD or DOE scientists since the departments implemented their policies. For instance:

- Representatives of the Institute of Nuclear Materials Management stated that, for the society's 2012 annual conference, federal attendance—historically about one-third of total attendees—dropped by 50 percent compared to the prior year.

- Representatives from the International Society for Optics and Photonics stated that 648 DOD and DOE scientists attended the society's Defense Security and Scanning conference in 2012, but that this number dropped to 206 in 2013.

- A representative from the Institute of Electrical and Electronics Engineers told us that, in 2014, the institute's annual conference on lasers was held in Santa Fe, New Mexico, within 50 miles of several DOD and DOE labs or research centers that conduct laser-related research. However, only one DOE scientist attended that year's conference.

- Representatives of the American Chemical Society said that the Army did not send any representatives to its Green Chemistry and Engineering conference in 2014. They noted that the Army participated in this conference in the past and this event would have entailed minimal travel expense for Army researchers as the conference was held in close proximity to the Army Research

[31]See Department of Defense Inspector General, *The Office of the Deputy Chief Management Officer Needs to Improve Oversight of the DoD Conference Report*, DODIG-2015-069 (Alexandria, Va: Jan. 21, 2015); and Department of Energy Office of Inspector General, *Inspection Report: Management of Department of Energy-Sponsored Conferences Costing More Than $20,000*, INS-L-15-02 (Washington, D.C.: Feb. 11, 2015).

Laboratory. Army conference management officials confirmed that it did not receive any requests to attend the conference, but did not know whether requests were not submitted because the nature of the review process deterred participation or if other factors contributed.

While many DOD and DOE officials we spoke with noted reduced conference attendance since the initial 2012 implementation of the departments' conference policies, some officials told us that conference attendance in 2014 increased in comparison to the prior 2 years although they could not provide data to that effect. They attributed the 2014 increase, in part, to a better understanding of the departments' conference policies. In addition, DOD officials attributed the lifting of some federal travel restrictions in 2014 as another reason for the change in conference attendance. Professional society representatives also observed such increases. Specifically, according to data provided by representatives from the International Society for Optics and Photonics, DOD and DOE attendance at the society's Defense Security and Scanning conference rose to 378 in 2014 from 206 in 2013.

In addition to citing examples of reduced participation at conferences, DOD and DOE officials cited differences in the expectations of roles for scientists and engineers at conferences. For example, DOD and DOE officials told us that prior to implementing their conference policies, there was not an expectation for scientists and engineers to serve in an "active role" at a conference, such as keynote speaker, panel chair, or presenter. However, since implementing the policies, many DOD and DOE officials noted that scientists and engineers are sometimes called upon to serve in an active role to obtain approval to attend. According to a director of one research area at Los Alamos National Laboratory, some scientists and engineers may not have a paper or research to present, but need to attend a conference to learn about a new area they might be working in, or the latest issues in their current field. The expectation to have an active role can hinder the ability of scientists and engineers to attend conferences for the purpose of learning about new areas or the latest issues. In addition, officials noted that scientists and engineers are more likely to be called upon to present the results of others' research. For example, DOE officials stated that for one conference in 2013, Lawrence Livermore National Laboratory sent 50 individuals who presented 70 papers on lab research projects.

Other Factors May Have Contributed to Changes in Conference Participation

In addition to DOD's and DOE's conference policies, officials identified other factors, such as OMB-required travel reductions and sequestration, as contributing to changes in participation for scientists and engineers at S&T conferences. In addition to review, approval, and reporting requirements, OMB's May 2012 memorandum also directed each agency to spend at least 30 percent less on travel expenses in fiscal year 2013 than in fiscal year 2010, and maintain this reduced level of spending each year through fiscal year 2016. DOD and DOE officials noted that, to the extent conferences entailed travel costs, the OMB requirement to constrain these costs may have affected attendance. For example, Air Force Research Laboratory officials stated that overall travel expenditures, which include conference expenses, decreased from $35 million in fiscal year 2010 to $7 million through the first 6 months of fiscal year 2014, although the officials could not estimate how much of the total travel expenditures were related to conferences. DOD and DOE officials also stated that additional overall budget reductions were required when the President ordered sequestration of discretionary and direct spending on March 1, 2013.[32] For example, Army Fiscal Planning Guidance issued in January 2013 directed staff to curtail attendance at or sponsoring of non-mission-critical conferences.[33] However, while DOD and DOE officials cited these factors as contributing to reduced attendance at S&T conferences, they could not provide data that would allow us to analyze the effect of each of these factors on conference participation.

[32]We previously reported on federal agencies' implementation of sequestration in GAO, *2013 Sequestration: Agencies Reduced Some Services and Investments While Taking Certain Actions to Mitigate Effects*, GAO-14-244 (Washington, D.C.: Mar. 6, 2014).

[33]U.S. Army, *Fiscal Planning Guidance for Budgetary Uncertainty* (Jan. 16, 2013).

Despite Streamlining Efforts, Length of Review and Approval Processes Has Posed a Challenge for DOD and DOE since Conference Policy Implementation

DOD and DOE officials cited the length of their departments' review and approval processes as having posed a challenge to timely decision making regarding conference requests since the implementation of their policies. Both departments have taken steps to mitigate this challenge by streamlining their review and approval processes. However, these steps have not ensured that applicants receive timely decisions on whether they are approved to attend a conference. In particular, the departments have not established time frames for providing conference review and approval decisions based on applicants' needs.

Length of DOD's and DOE's Review and Approval Processes Poses a Challenge to Timely Decision Making about Conference Requests

DOD and DOE officials, in 29 of the 34 interviews we conducted, cited the increased length of their conference review and approval processes as a challenge since implementing the departments' conference policies because scientists and engineers do not always receive timely decisions about whether their conference attendance is approved. Prior to OMB's May 2012 memorandum, S&T program managers within the labs were responsible for reviewing and approving conference requests, according to DOD and DOE officials. For example, at NNSA, a resource analyst determined whether the lab had funds, then a line manager assessed the business case for participation, and lastly an associate director for management at the lab approved or rejected conference requests. One Los Alamos National Laboratory official said this process typically took a period of weeks to complete. Similarly, Air Force and Army documents estimate the average time to respond to conference requests was less than a week prior to the 2012 conference policy implementation.

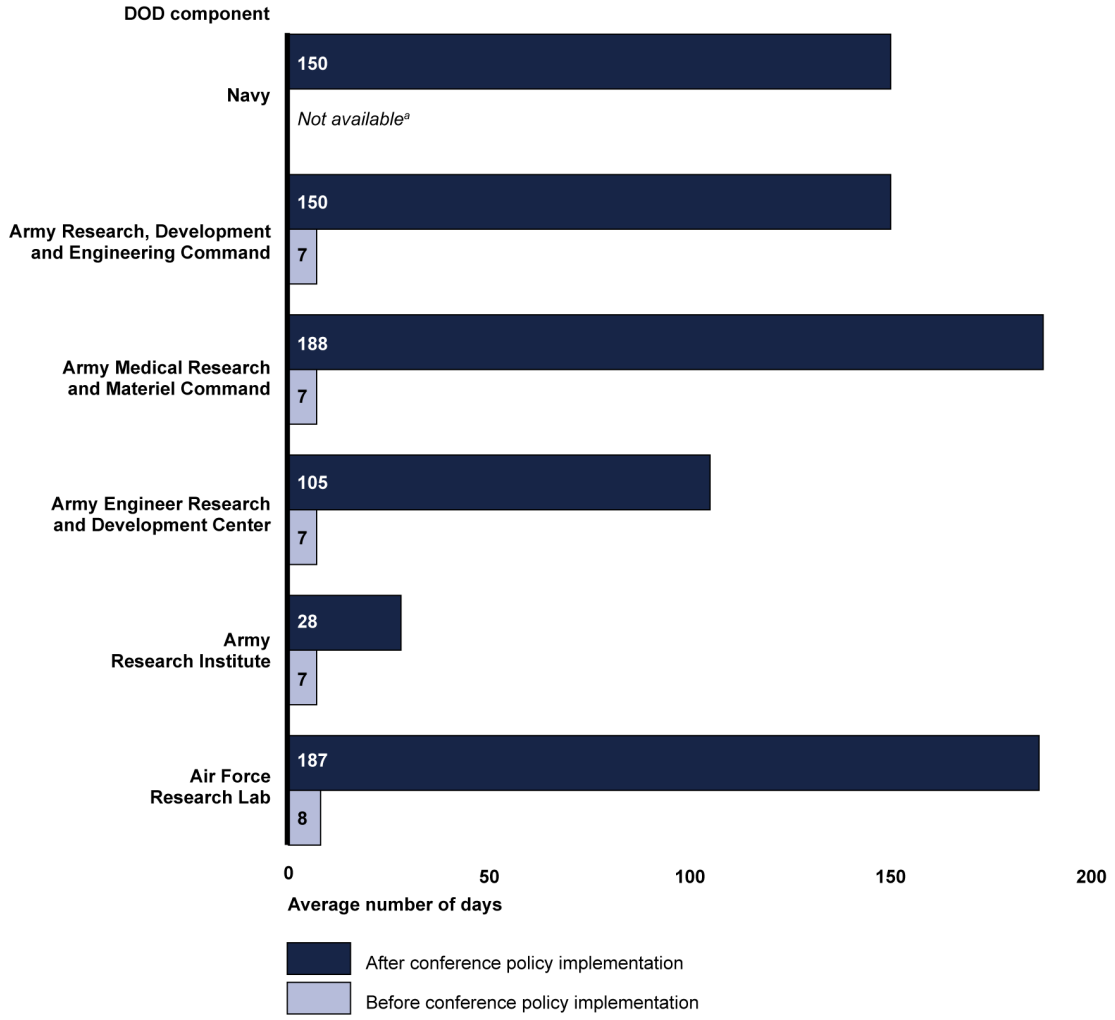
Since implementing the departments' conference policies, DOD and DOE officials said conference requests take longer to be reviewed and approved due, in part, to the multiple levels of review required. For example, the Principal Deputy Assistant Secretary of Defense for Research and Engineering stated that one Army command's review and approval process—the U.S. Army Research, Development and Engineering Command—can take at least 3 to 4 months and involves 17 steps, as well as additional substeps, that end with a three- or four-star

general approving or rejecting conference requests.[34] The command conducted an analysis that showed the process of submitting and reviewing a conference request within the command took an estimated total of 132 hours, including 37 hours spent by the individual requesting to attend the conference for activities such as collecting information to draft documents and memos, before the request was forwarded to the next step in the review and approval process.[35] In response to NSTC's April 2014 data request, DOD components also provided data illustrating the time frames for completing their review and approval processes both before and after implementing the department's conference policy. Figure 2 shows the average number of days DOD components reported to NSTC for reviewing and approving conference requests before and after conference policy implementation.

[34]We also reviewed documentation that outlined the steps in the Army command's review and approval process.

[35]The official noted that the Army's Research, Development and Engineering Command conducted this analysis in March 2014 and that, with process changes since that time, the average time for reviewing and approving requests is now somewhat less. However, the command has not updated its analysis.

Figure 2: Average Numbers of Days for Review and Approval of Conference Requests by Department of Defense (DOD) Components before and after Policy Implementation



Source: GAO analysis of DOD data. | GAO-15-278

Note: In some instances, these data also include the time taken to prepare conference requests. Where necessary, we used an average of 30 days per month to convert data provided in months to days. Also, some DOD components provided a range of days for their review and approval processes. Whenever a range was given in the original data, the higher end of the range is depicted in the figure. Further, some responses indicated review and approval time frames prior to conference policy implementation were "less than 1 week." In these cases we used 7 days in the figure to represent the highest possible value for the response time.

[a]The Navy did not collect data on time frames for reviewing and approving conference requests prior to implementing the conference policy in response to OMB's May 2012 memorandum.

In interviews with us, DOE officials also cited the increased length of their review and approval process since implementing the department's conference policy. For example, according to Lawrence Livermore National Laboratory officials, the conference review and approval process may take up to 9 months as the requests are reviewed at both the lab level and higher levels of DOE, depending on the cost of the conference. Once a conference request moves from the lab to DOE headquarters, DOE officials said the final review process averages 49 days.

As a result of the increased length of their review and approval processes, DOD and DOE scientists and engineers do not always receive timely decisions about whether their conference attendance is approved. Specifically, DOD and DOE officials stated that scientists and engineers often do not always receive approval decisions until close to the start of a conference. For example, Sandia National Laboratories officials provided an analysis of 10 key conferences held in 2013 which found that 51 approvals were received less than 20 days before the start of a conference.[36]

DOD and DOE officials and professional society representatives identified two potential effects if scientists and engineers do not know whether their conference attendance will be approved until close to the start of a conference. This includes a disincentive for scientists and engineers to take on an active role and increased costs for conferences. Specifically:

- According to estimates provided by professional society representatives, conference organizers may begin planning the agenda 3 to 6 months in advance of the event by requesting that researchers, including those from DOD and DOE, submit papers to present and by inviting keynote speakers. Scientists and engineers are less likely to submit papers or accept speaking invitations if they do not have assurance that a decision regarding attendance will be made in a timely fashion, DOD and DOE officials told us, because they may be concerned about their standing with peers in their technical communities if they have to cancel shortly before the conference begins because they did not get approval to attend in time. These officials along with professional society representatives

[36]In its response to the NSTC data request, Sandia National Laboratories provided data illustrating late approvals to attend conferences. Further quantitative data are not available because the lab's response focused on a qualitative analysis of 10 major conferences.

also told us that scientists and engineers could be excluded from future conferences as a result of cancelling their participation in a conference at which they had already agreed to speak or present.

- Several DOD and DOE officials cited the potential for increased costs if a decision regarding attendance is not approved until close to the beginning of a conference, as scientists and engineers may no longer be able to take advantage of reduced lodging, transportation, or registration costs. For example, one Los Alamos National Laboratory official said that for a recent American Chemical Society meeting, airfares increased $400 while the conference request was being reviewed, resulting in one individual's airfare increasing to $1,400 for a domestic roundtrip for the conference due to a last-minute approval.

DOD and DOE Have Taken Some Steps to Streamline Their Existing Processes, but Have Not Established Time Frames for Providing Decisions Based on Applicants' Needs

DOD and DOE officials have taken steps to streamline their review and approval processes to mitigate the challenge posed by their length. DOD, the military departments, DOE, and NNSA have, among other actions, mapped their processes to better understand where opportunities for streamlining exist. Table 1 highlights examples of the steps taken by DOD, the military departments, DOE, and NNSA to streamline their conference review and approval processes.

Table 1: Examples of Department of Defense (DOD) and Department of Energy (DOE) Entities' Steps to Streamline Conference Review and Approval Processes

Entity	Streamlining steps taken
DOD	DOD clarified in its policy that no-cost conferences do not require approval.
Army	The Army's Research, Development and Engineering Command initially required two legal reviews of its conference requests, the first at the subordinate-level organization and another at the command's general counsel. Subsequently, an official from the command said the command revised its requirements to eliminate one of these reviews in response to an analysis done to identify bottlenecks in the review and approval process. According to Army documentation, under most circumstances removing this step can reduce the length of the review and approval process by about 20 days.[a]
Navy	According to officials from the Department of Navy Assistant for Administration, the Assistant for Administration is briefed about conference requests on a daily basis, which has enabled a 2- to 3-day turnaround once the conference request arrives at the assistant's office. In addition, Office of Naval Research and Naval Research Laboratory personnel submit all conference attendance requests directly to the Department of Navy Assistant for Administration for approval. The Department of Navy Assistant for Administration routinely approves attendance at local conferences with minimal or low cost to the government as well as requests made by the Office of Naval Research Global.[b]
Air Force	The Air Force delegated approval authority for non-DOD-sponsored conferences with Air Force-wide costs of $20,000 or less to the Commander of the Air Force Research Laboratory, among others, which shortened the review and approval process for these conferences.
DOE	DOE worked to address the length of the review and approval process by developing a list of reoccurring annual non-DOE sponsored conferences that are subject to a streamlined review and approval process. Under this process, a full conference request package is not required for participation up to 125 percent of the cost of the previous year's level. DOE officials told us this effort has decreased the length of time for reviewing requests for these conferences.
NNSA	The National Nuclear Security Administration (NNSA) obtained a DOE exemption from the conference review and approval process for all international training and regularly occurring working meetings related to one of its initiatives.

Source: GAO analysis of DOD, DOE, and NNSA information. | GAO-15-278

[a]The Army's Research, Development and Engineering Command conducted an analysis of the review process for requests from the Army Research Lab and made some changes as a result, such as removing an additional legal review; however, the final analysis was not completed due to the Army developing an electronic conference package review system that is expected to address the challenges identified.

[b]The Office of Naval Research Global promotes collaboration with international scientists through programs such as exchange visits and conferences.

DOD and DOE have taken other steps intended to provide applicants more timely decisions about their conference requests. These efforts, however, have not provided reasonable assurance that applicants always receive decisions in a timely manner that meets their needs. In particular, DOD and DOE conference managers, as they became more familiar with their respective review and approval processes, have provided guidance that calls for the submission of requests by specific deadlines. For example, the Air Force Research Laboratory provided lab personnel with a document that specifies when conference applicants should submit their requests to allow sufficient time for the review and approval process and increase the applicants' chances of receiving an approval before a conference is held. Similarly, DOE has set deadlines to apply to attend

specific conferences working backwards from the registration deadlines to allow time for the review and approval process before the end of discounted registration. While these deadlines may be helpful in letting applicants know when they need to submit their requests, the deadlines have two shortcomings:

- These deadlines are focused on when applicants should submit their conference requests, rather than providing time frames for when applicants should expect to receive decisions about their request.

- Applicants may have different needs for the timing of decisions about their conference requests based on whether they would like to take on an active role at a conference or take advantage of lower-cost travel arrangements. Since these deadlines are based on either the beginning of a conference or the early registration date, they do not help ensure timely decision making about conference requests that would allow applicants to more confidently commit to active conference roles.

Based on our analysis, DOD's and DOE's conference policies do not establish specific time frames for when conference request decisions are to be provided, and their current guidance for submitting conference requests does not ensure that decisions are provided based on applicants' needs.

DOD and DOE have ongoing streamlining efforts to reduce the length of their conference review and approval processes, but these efforts do not specifically include establishing time frames for providing conference request decisions based on applicants' needs, according to DOD and DOE officials. For example, DOE officials told us they are conducting outreach sessions with lab directors to identify additional streamlining opportunities and have established a Conference Management Best Practices group. A DOE management official noted that, as part of these outreach sessions, the lack of decision time frames for those needing early approvals (e.g., because they hoped to have an active conference role) was identified as a process weakness. The official also noted that a process that allows for different approval time frames was informally discussed to address this weakness. However, DOE officials did not agree on plans for what adjustments would be made to DOE's policy or what best practices would be implemented to ensure timely conference decisions. Additionally, an Office of the DCMO official said the office intends to make changes to DOD's conference policy in fiscal year 2015, but did not specify the scope of any planned review of DOD's policy,

including whether the review would focus on the time frames for providing conference review and approval decisions based on applicants' needs.[37] Furthermore, while OMB's January 2015 controller alert stated that it was providing clarification that agencies could delegate conference approval authority to a level deemed appropriate by the Secretary or Deputy Secretary, neither DOD or DOE indicated any plans for further delegation of authority. Specifically, an Office of the DCMO official said he did not foresee any changes to DOD's conference policy as a result of the OMB controller alert clarification, and a DOE management official said DOE had no position on the clarification provided by OMB's alert.

Standards for Internal Control in the Federal Government state that as programs change and agencies strive to improve processes, management must continually assess and evaluate its internal controls to assure that control activities are effective and are updated when necessary.[38] Also, internal controls should provide reasonable assurance that the objectives of the agency are being achieved. Lastly, according to federal internal control standards, information should be recorded and communicated to management and others within the entity who need it and within a time frame that enables them to carry out their internal control and other responsibilities. OMB's May 2013 controller alert noted that the conference review and approval requirements from its May 2012 memorandum, in part, ensure that conference expenditures are cost-effective and advance agencies' missions and goals. While such assurance is important for the effective and efficient use of federal funds, as the length of DOD's and DOE's conference review and approval processes increased following the implementation of their conference policies, scientists and engineers have not always received timely decisions about their requests. The departments have taken steps to provide more timely decisions by streamlining their review and approval processes to shorten their length and by setting specific deadlines for applicants to submit conference requests. However, DOD and DOE continue to lack decision making time frames, and therefore, do not always provide request decisions to applicants based on their needs for a

[37]According to OSTP officials, NSTC is in the process of analyzing information provided in response to its April 2014 request for data on conference policy implementation. An OSTP official said that NSTC will hold a forum for agencies to share best practices for implementing their conference policies, but that the exact timing of the forum is uncertain as of February 2015.

[38]GAO/AIMD-00-21.3.1.

specific conference. As a result, scientists and engineers do not always receive timely information based on their needs about whether their participation is approved, which is inconsistent with internal control standards. Without establishing time frames for providing conference review and approval decisions based on applicants' needs, the ability of the departments to address uncertainty about whether applicants can serve in an active role, such as a keynote speaker, or take advantage of discounts on registration and travel costs remains inhibited.

DOD and DOE Have Identified and Communicated Risks from Changes in Conference Participation but Have Not Analyzed These Risks for Any Potential Effects on Their S&T Missions

DOD and DOE officials have identified risks from changes in conference participation to the defense S&T enterprise since the implementation of their conference policies, and have publicly communicated these risks to Congress. However, DOD and DOE have not analyzed these risks for any potential effects they may have on the defense S&T enterprise's missions and do not have plans to conduct such an analysis.

DOD and DOE Officials Identified and Communicated Risks from Changes in Conference Participation

DOD and DOE officials identified several risks from changes in conference participation to the mission of the defense S&T enterprise. According to our analysis of 34 interviews we conducted with DOD and DOE officials, the three risks most frequently cited were (1) a potential decline in quality of scientific research, (2) difficulty in recruitment and retention, and (3) a diminished leadership role for the defense S&T enterprise.

Potential decline in quality of scientific research. DOD and DOE officials in 26 of our 34 interviews said reduced conference attendance could result in a decline in the quality of scientific research over time. These officials explained that scientists and engineers in the defense S&T enterprise use a peer review process to promote research quality by seeking independent scrutiny of research results from other experts in their fields before publicizing the results. A key means of peer review—and in some cases, the primary means, according to DOD and DOE officials—is presenting research at S&T conferences. For example, Air

Force officials stated that the publications of certain professional societies represent the archival foundation of knowledge for particular technical areas. Scientific papers accepted for these journals must be peer reviewed, and attendance at the societies' conferences is an important step in that process to obtain feedback to help improve the research results. For instance, a research director at Sandia National Laboratories described a scientist who presented research on radiation effects at a conference and in turn obtained input from several different peers in related fields that resulted in amendments to his research. The director said the scientist's ability to receive feedback from multiple sources at once would not have been possible in a non-conference setting. DOD and DOE officials we spoke with were concerned that, with reduced attendance, the quality of research within the defense S&T enterprise could suffer over time as a result of not sharing scientific information or engaging in peer review at conferences.

Difficulty in recruitment and retention. DOD and DOE officials in 21 of the 34 interviews we conducted said reduced conference attendance could present challenges in recruiting and retaining talented scientists and engineers. For example, Naval Research Laboratory officials said that from fiscal year 2009 to May 2014, the lab hired 103 permanent new scientists and engineers as a result of recruiting at conferences. With reduced attendance at S&T conferences, the officials were concerned about their ability to recruit new staff. Similarly, the officials stated that they were concerned that reduced conference attendance could make it more difficult to retain highly qualified staff. They noted that conference attendance constraints were cited in exit interviews at the Naval Research Laboratory as a contributing factor in nine staff resignations. Additionally, a report on the condition of the research environment at Sandia National Laboratories stated that restraints on conference attendance have negatively affected the research environment and could affect recruiting and retention of talented scientists and engineers in the future.[39] DOD and DOE officials said scientists and engineers establish their professional reputations by presenting research at conferences in order to have their work published in the journal associated with the professional society that sponsored the conference. Officials said that without such opportunities, researchers may not be attracted to employment or

[39]Department of Energy, Sandia National Laboratories, *State of the Research Environment 2013* (Feb. 2014).

continued employment at a federal lab as a means of accomplishing their professional objectives.

A diminished leadership role for the defense S&T enterprise. DOD and DOE officials in 9 of our 34 interviews said changes, such as reduced conference attendance, could diminish the overall leadership role of the defense S&T enterprise over time. According to the officials, the U.S. defense S&T enterprise historically has provided leadership by shaping the scientific research agenda in certain technical areas and maintaining relationships with partner countries' scientists. For example, officials in the Office of the Air Force Chief Scientist said the service has traditionally had a strong relationship with scientists from another country in the area of aerospace hypersonic research. However, these officials expressed concern that this relationship could be diminished without international conference attendance, as these scientists could seek to establish relationships with scientists from other countries in lieu of U.S. partnerships. Further, according to a letter to OMB from the presidents of the Institute of Nuclear Materials Management and the American Nuclear Society, reduced conference attendance at their respective societies' meetings—resulting from the implementation of OMB's conference oversight requirements—will harm U.S. nuclear energy and nonproliferation efforts by stifling scientific and technical exchange.[40] Without the ability to reliably attend these conferences, DOD and DOE officials were concerned that federal scientists and engineers could cede leadership in S&T matters to scientists from other countries.

DOD and DOE officials have publicly communicated risks that they identified to the defense S&T enterprise from changes in conference participation, including reduced attendance. DOD and DOE officials have used multiple forums to publicly communicate these risks. For example, in a January 2014 letter to the Chairman of the Senate Homeland Security and Governmental Affairs committee, the DOE National Laboratory Directors' Council expressed concerns of risks to the defense S&T enterprise, specifically citing difficulty in recruiting and retaining qualified scientists and engineers.[41] Further, DOD and DOE officials have

[40]Michael Corradini and Ken B. Sorenson to the Honorable Sylvia Burwell, Director, Office of Management and Budget (Apr. 29, 2013).

[41]The National Laboratory Directors' Council is an organization formed by the directors of each of the 17 DOE national labs, including the three NNSA labs.

communicated their concerns in congressional hearings. For example, at a March 2014 congressional hearing, the Principal Deputy Assistant Secretary of Defense for Research and Engineering testified about the state of DOD's S&T program and expressed concerns about maintaining a healthy workforce that includes young scientists and engineers with reduced ability to attend S&T conferences.[42]

Professional society representatives expressed similar concerns about risks to the defense S&T enterprise. For example, representatives from three professional societies said U.S. scientists and engineers historically have demonstrated leadership in the worldwide scientific community by making keynote presentations at conferences, among other things. However, some representatives said they are seeing foreign countries increasing the numbers of their scientists and engineers attending conferences as U.S. government researchers' attendance has decreased, and that foreign attendees have taken over key speaking positions when U.S. government researchers could not attend. Further, according to a representative from the Institute of Electrical and Electronics Engineers, DOD and DOE participation in the society's 2014 annual meeting on lasers was so low that the society is considering moving future meetings in this technical area overseas, rather than continue the event in Santa Fe, New Mexico, where it has been held routinely given the expertise of local federal scientists. The representative noted that this reduced attendance will diminish U.S. S&T leadership because the society's conferences are planned by "senior fellows." In order to become a senior fellow, a scientist or engineer needs to establish a record of presenting at the society's conferences. Without the ability to reliably attend conferences to present research, federal scientists and engineers will be less frequently selected for these senior fellow positions and, as a result, may not have the ability to shape conferences' technical programs to meet U.S. needs.

[42]Alan R. Shaffer, Principal Deputy Assistant Secretary of Defense for Research and Engineering, *Department of Defense (DOD) Fiscal Year 2015 Science and Technology Programs: Pursuing Technology Superiority in a Changing Security Environment*, testimony before the House Committee on Armed Services, Subcommittee on Intelligence, Emerging Threats and Capabilities, 113th Cong., 2nd sess. (Mar. 26, 2014).

DOD and DOE Have Not Analyzed the Risks from Changes in Conference Participation for Any Potential Effects on Their Missions

Officials from the Office of the Assistant Secretary of Defense for Research and Engineering and the Office of the DCMO as well as DOE officials stated that their respective departments have not analyzed the risks associated with changes in conference participation for any potential effects on their scientific mission. Moreover, DOD and DOE have not documented in a plan their intent to conduct such an analysis or how these risks and their potential effects will be periodically reevaluated. Officials from both departments further explained that they do not have complete information, such as data on conference attendance or whether participants continue to serve as speakers, that could help them analyze these potential effects. DOD and DOE officials we interviewed expressed uncertainty as to what information might be needed to help them analyze the risks associated with changes in conference participation. For example, officials with the Office of the Assistant Secretary of Defense for Research and Engineering said it is difficult to demonstrate the effects of reduced conference attendance, in part because the effects may take a long period to manifest, and also because of other factors beyond the conference policy that may affect attendance. Still, the DOD officials said that it could be feasible to demonstrate workforce effects from conference policy implementation, such as reduced recruitment or higher attrition. While identifying the needed information may be difficult, some organizations have begun efforts to identify and collect information in initial efforts that they believe may help them to analyze the potential effects. For example, in response to NSTC's data request, Sandia National Laboratories collected some quantitative and qualitative data to help examine the effects of changes in conference participation. Also, as noted above, the Naval Research Laboratory has collected some exit interview data on the extent to which conference attendance constraints contributed to staff resignations.

Standards for Internal Control in the Federal Government state that agencies must assure that their control activities are effective and are updated when necessary as they strive to improve operational processes.[43] One internal control is assessing risks the agency faces. Risk assessment is the identification and analysis of relevant risks associated with achieving an agency's objectives and forming a basis for determining how risks should be managed. According to internal control standards, once risks have been identified, they should be analyzed for

[43]GAO/AIMD-00-21.3.1.

their possible effects on achieving an agency's objectives. A risk analysis includes estimating the risk's significance, examining the likelihood of its occurrence, and deciding which actions should be taken to manage the risks. In addition, according to federal internal control standards, because conditions continually change, mechanisms such as periodic reevaluations should be provided to identify and address any risks prompted by such changes. These standards also state that any internal controls should be clearly documented, which can be done through the development of a plan. While DOD and DOE officials have identified and publicly communicated the risks from changes in conference participation to their missions, they have not analyzed these risks for any potential effects on their missions. Specifically, DOD and DOE have not developed plans to analyze the risks from changes in conference participation for any potential effects, including identifying and collecting additional information needed to help them analyze these risks, or to periodically reevaluate the risks and their potential effects. Without developing a plan to analyze and periodically reevaluate the risks from changes in conference participation for any potential effects, it will be difficult for DOD and DOE to effectively manage any potential effects from these risks on the ability of the defense S&T enterprise to achieve its missions.

Conclusions

Scientists and engineers at DOD and DOE's NNSA labs rely on S&T conference participation to help meet their missions to support national interests in science and defense. DOD and DOE, through their DCMO and Office of Management, respectively, implemented conference policies that address OMB's May 2012 memorandum requirements for a review and approval process as well as reporting on spending. While complete data before and after OMB's May 2012 memorandum are not available, DOD and DOE officials and professional society representatives provided examples of changes in conference participation—particularly reduced attendance—since implementing the departments' policies. In addition, the length of the review and approval processes under the DOD and DOE conference policies has increased, resulting in scientists and engineers not always receiving timely decisions about conference requests to determine whether they could take on active conference roles or take advantage of lower-cost travel arrangements. DOD and DOE have begun to mitigate this challenge by taking steps to streamline their conference review and approval processes, but, to date, these streamlining efforts have not always resulted in more timely decisions about conference requests in accordance with federal internal control standards. In particular, DOD and DOE have worked to provide more timely decisions by streamlining their

review and approval processes to shorten the length and by setting specific deadlines for applicants to submit conference requests. However, DOD and DOE continue to lack decision making time frames and provide request decisions to applicants without consideration of their needs for a specific conference. Providing assurance that conference expenditures are cost-effective and advance agencies' missions and goals is important for the effective and efficient use of federal funds, and was a key aspect of what DOD's and DOE's conference policies were intended to achieve. However, until DOD and DOE establish time frames for providing conference review and approval decisions based on applicants' needs, scientists' and engineers' ability to participate in S&T conferences will continue to be affected by uncertainty surrounding the timing of these decisions.

Further, DOD and DOE have identified and publicly communicated risks to their missions from changes in conference participation, such as reduced attendance or fewer conference leadership roles. These risks include a potential decline in the quality of research conducted by their scientists, difficulty attracting or retaining scientists and engineers, and diminished leadership by the defense S&T enterprise. However, the departments have not analyzed these risks for any potential effects on their S&T missions and do not have a plan to do so on a periodic basis, which is inconsistent with federal internal control standards. Identifying and collecting additional information may help the departments better assess such potential effects. Without developing a plan to analyze these risks for their potential effects and to periodically reevaluate them, it will be difficult for DOD and DOE to effectively manage the potential effects from reduced conference participation on the ability of the defense S&T enterprise to achieve its missions.

Recommendations for Executive Action

To help provide more timely decisions to those seeking to participate in conferences, we recommend the following two actions as part of DOD's and DOE's ongoing streamlining efforts to reduce the length of their conference review and approval processes:

- the Secretary of Defense direct the Secretaries of the military departments, in coordination with the Office of the DCMO, to establish time frames for providing conference review and approval decisions based on applicants' needs; and

- the Secretary of Energy direct DOE's Office of Management and the Administrator of NNSA, in coordination with the relevant national lab

directors, to establish time frames for providing conference review and approval decisions based on applicants' needs.

To help manage the risks from changes in conference participation and any potential effects on the defense S&T enterprise, we recommend the following two actions:

- the Secretary of Defense direct the Assistant Secretary of Defense for Research and Engineering, in consultation with the Office of the DCMO, to develop a plan to analyze and periodically reevaluate the risks from changes in participation at S&T conferences for any potential effects on DOD's ability to meet its scientific mission, including identifying and collecting additional information needed to conduct this analysis; and

- the Secretary of Energy direct the Administrator of NNSA and the relevant national lab directors, in consultation with DOE's Office of Management, to develop a plan to analyze and periodically reevaluate the risks from changes in participation at S&T conferences for any potential effects on NNSA's ability to meet its scientific mission, including identifying and collecting additional information needed to conduct this analysis.

Agency Comments and Our Evaluation

We provided a draft of this report to DOD and DOE for review and comment. In written comments, which are summarized below and reprinted in appendix III, DOD partially concurred with the first recommendation and concurred with the second recommendation directed to it. In its written comments, which are summarized below and reprinted in appendix IV, DOE concurred with the two recommendations directed to it.

In partially concurring with the first recommendation to establish time frames for providing conference review and approval decisions based on applicants' needs, DOD stated that it has undertaken significant efforts to streamline its conference review process. DOD also stated that it will rely upon the collection and validation of appropriate data and any analysis and determination of root causes to implement further solutions, which may or may not include establishing review and approval time frames. While we support DOD's continued efforts to streamline its conference review and approval process, DOD did not provide an explanation as to why it would not be appropriate to establish time frames for providing conference review and approval decisions based on applicants' needs. As discussed in this report, the uncertainty surrounding the timing of

conference attendance decisions hinders scientists and engineers from taking advantage of cost saving opportunities, such as early registration discounts and less expensive travel arrangements, as well as opportunities to more actively engage at conferences. In addition, DOD officials have cited the importance of conference participation to help ensure technical competence, improve professional development, and serve as a venue for the recruitment and retention of qualified scientists and engineers, as well as the risks associated with changes in conference participation. Given this, we continue to believe that the recommendation to establish time frames based on applicants' needs will allow scientists and engineers to more effectively plan for and participate in S&T conferences.

In concurring with the second recommendation to develop a plan to analyze and periodically reevaluate the risks from changes in participation at S&T conferences, DOD noted that it is committed to analyzing the impact and, where appropriate, mitigating or eliminating risks to increase the ability of its scientific and engineering workforce to fulfill its mission.

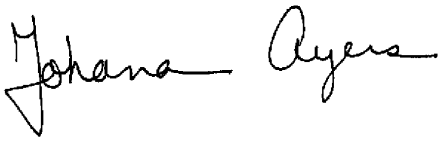
In its written comments, DOE noted that it takes seriously the need to balance its responsibility as a steward of taxpayer dollars with the benefits that conference participation brings. In concurring with the first recommendation, DOE stated that it believes the establishment of conference review and approval time frames that consider applicants' needs will also support OMB's guidance and statutory requirements as well as the department's responsibility to control costs and achieve mission goals. DOE stated that it estimates it will complete this recommendation by July 31, 2015. In concurring with the second recommendation, DOE stated that it anticipates completing its plan to analyze and periodically reevaluate the risks for changes in participation in conferences by September 30, 2015. These actions, if implemented as planned, would address the recommendations.

DOD and DOE also provided technical comments, which we have incorporated into the report, as appropriate.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Defense, the Secretary of Energy, and the Director of OSTP. In addition, the 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 Johana Ayers at (202) 512-5741 or ayersj@gao.gov, or John Neumann at

(202) 512-3841 or neumannj@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 major contributions to this report are listed in appendix V.



Johana Ayers
Director, Defense Capabilities and Management

John Neumann
Director, Natural Resources and Environment

List of Committees

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

The Honorable Thad Cochran
Chairman
The Honorable Richard Durbin
Vice Chairman
Subcommittee on Defense
Committee on Appropriations
United States Senate

The Honorable Lamar Alexander
Chairman
The Honorable Dianne Feinstein
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United States Senate

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

The Honorable Rodney Frelinghuysen
Chairman
The Honorable Pete Visclosky
Ranking Member
Subcommittee on Defense
Committee on Appropriations
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 I: Objectives, Scope, and Methodology

Our objectives for this review were to (1) assess whether the Department of Defense (DOD) and Department of Energy (DOE) conference policies address Office of Management and Budget (OMB) requirements, and identify any costs associated with implementing these policies; (2) examine changes in science and technology (S&T) conference participation since DOD and DOE implemented their conference policies; (3) examine the extent to which DOD and DOE have faced and mitigated any challenges resulting from conference policy implementation; and (4) examine the extent to which DOD and DOE have identified and assessed any risks from changes in conference participation.

Given the magnitude of the defense S&T enterprise, we selected and reviewed a subset of organizations within DOD and DOE's National Nuclear Security Administration (NNSA) S&T enterprise. We selected the three principal DOD research laboratories (labs) operated by the military departments (Army, Navy, and Air Force) and all the three NNSA labs.[1] Although the information we found at these labs is not generalizable to all DOD and DOE S&T components, it provides illustrative context about the experiences and experiences of this subset of organizations that are key components of the defense S&T enterprise. Specifically, the labs within our scope are the

- Army Research Laboratory, Adelphi, Maryland;
- Naval Research Laboratory, Washington, D.C.;
- Air Force Research Laboratory, Dayton, Ohio;
- Lawrence Livermore National Laboratory, Livermore, California;
- Los Alamos National Laboratory, Los Alamos, New Mexico; and
- Sandia National Laboratories, which has locations in Albuquerque, New Mexico, and Livermore, California.

We also selected one defense agency from the DOD S&T enterprise, the Defense Advanced Research Projects Agency (DARPA), because it had the largest amount of DOD's Research, Development, and Engineering funding in fiscal year 2014 among defense agencies and, according to DARPA officials, had significant participation in S&T conferences.

In addition to conducting interviews with officials from the DOD and NNSA labs and DARPA, we also interviewed officials from DOD, DOE, and

[1]The NNSA labs are operated by contractors on behalf of NNSA.

professional societies responsible for organizing and sponsoring S&T conferences. Specifically, at DOD, we conducted interviews with the

- Office of the Deputy Chief Management Officer;
- Joint Staff Office of Force Structure, Resource and Assessment;
- Office of the Assistant Secretary of Defense for Research and Engineering;
- Office of the Administrative Assistant to the Secretary of the Army;
- Office of the Department of the Navy Assistant for Administration;
- Office of the Administrative Assistant to the Secretary of the Air Force;
- Army Materiel Command;
- Army Medical Command;
- Army Research, Development and Engineering Command;
- Office of Naval Research;
- Office of the Air Force Chief Scientist; and
- Office of the Assistant Secretary of the Air Force for Acquisition.

At DOE, we conducted interviews with the

- Office of Management;
- NNSA Offices of Management and Budget, Defense Programs, and Defense Nuclear Nonproliferation; and
- NNSA field offices associated with the three labs included in our scope.

Additionally, we interviewed officials from the White House Office of Science and Technology Policy (OSTP) about the National Science and Technology Council's effort to collect data on conference participation. Finally, we selected and interviewed representatives from five professional societies that both sponsor conferences and had the largest numbers of conference publications by DOD and DOE scientists and engineers from 2004 through 2013.[2] We confirmed with DOD and DOE officials that these professional societies were the top five conference sponsors with the highest number of publications by DOD and DOE. The five professional societies are the

- American Chemical Society;

[2]We used the Thompson Reuters Web of Science database to extract conference publication records to use as a proxy for conference attendance by DOD and DOE. We analyzed data from 2004 through 2013 as this was the time period over which comparable data on conference publications were available through the database.

- American Physical Society;
- Institute of Electrical and Electronics Engineers;
- Institute of Nuclear Materials Management; and
- International Society for Optics and Photonics.

To assess whether the DOD and DOE conference policies address OMB requirements and to identify any costs associated with doing so, we reviewed department-wide policies issued by DOD's Office of the Deputy Chief Management Officer and DOE's Office of Management. We also reviewed implementing guidance set forth by each of the military departments and their three principal S&T research labs along with NNSA and its three labs. For DOD, we reviewed information in our January 2014 report, in which we assessed the extent to which DOD's conference policy was consistent with OMB requirements, and determined whether there was any change in DOD's policy since we last reported on it.[3] For DOE, we assessed DOE's conference policy against the elements specified in OMB's May 2012 memorandum. Further, we interviewed DOD and DOE officials across multiple departmental and S&T organizations included in our scope as identified above about DOD's and DOE's policies. To identify the costs associated with implementing the conference policies, we requested information on the amount of staff time spent reviewing conference requests or expenses related to information technology tools used for conference oversight, incurred since the departments implemented their policies. The departments are not required to and generally could not provide complete data on implementation costs. However, we obtained examples of implementation costs during interviews with DOD, DOE, and OSTP officials. We reviewed the sources of these examples with the officials, and found the information sufficiently reliable for purposes of discussing the range of possible implementation costs.

To examine any changes in S&T conference participation since DOD and DOE implemented their conference policies, we requested conference attendance data from the six labs for 1 year prior to the conference policy's implementation in 2012 through the first quarter of fiscal year 2014, the most recent full quarter available at the time of our request. However, we found that the agencies do not collect comprehensive data on S&T conference attendance. As a result, we were unable to analyze

[3]GAO, *Defense Management: DOD's Conference Policy Is Generally Consistent with OMB's Requirements*, GAO-14-150 (Washington, D.C.: Jan. 21, 2014).

S&T conference attendance trends prior to and following implementation of the agencies' conference policies. We also interviewed DOD and DOE conference oversight managers and S&T program managers, including those with departmental responsibilities as well as those with responsibility for the military departments, NNSA, and their respective labs, to obtain examples of possible changes in conference participation, and reviewed the sources of those examples with officials. DOD and DOE officials provided some examples that illustrated decreased attendance since conference policy implementation, but the decline cannot be directly attributed to the change in policy. Although we did not independently verify the reliability of the data provided in these examples, we determined that this information was sufficiently reliable for the purposes of providing opinions of agency officials and corroborated those opinions with representatives from professional societies that organize and sponsor S&T conferences. To understand any changes in conference participation, we also interviewed representatives from five professional societies responsible for organizing S&T conferences. The information we obtained from these five professional societies is not generalizable to all professional societies, but provides illustrative context from the experiences of this subset of societies that sponsor conferences and had the largest numbers of conference publications by DOD and DOE scientists and engineers from 2004 through 2013.

To address our objectives regarding the extent to which DOD and DOE have faced and mitigated any challenges related to implementing their conference policies, and have identified any risks from changes in conference participation and analyzed their potential effects, we conducted a total of 34 interviews, which collectively included 141 DOD and DOE officials at multiple departmental and S&T organizations included in our scope and conducted a content analysis of the interviews. Based on this analysis, we enumerated lists of challenges and mitigation strategies as well as benefits identified during these interviews as being at risk because of changes in conference participation. We then shared these lists with a subset of 44 conference manager and S&T program manager officials we interviewed, whom we selected based on their roles and responsibilities as part of the conference review and approval process. Following this, we provided these officials with an opportunity to add any additional information to each of these lists to ensure our lists were comprehensive in terms of identifying challenges and risks. Based on these lists, we developed and sent a survey to this same subset of officials to rate the effect of potential mitigation strategies, and to prioritize steps for implementing the strategies. We received responses from 31 of the 44 officials surveyed. The information we obtained from this survey is

not generalizable to all DOD and DOE conference management and S&T program manager officials, but provides illustrative context from the experiences of this subset of officials. Further, we reviewed relevant documentation on DOD and DOE efforts to mitigate conference policy implementation challenges, including studies and proposed guidance. We also interviewed DOD, DOE, and OSTP officials and representatives from five professional societies responsible for organizing S&T conferences, as discussed earlier, to obtain additional information on the benefits that may be at risk from changes in conference participation. Finally, we compared DOD's and DOE's efforts to mitigate any identified challenges and efforts to assess the risks from changes in conference participation for any potential effects against practices described in the *Standards for Internal Control in the Federal Government*.[4]

We conducted this performance audit from February 2014 to March 2015 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.

[4]GAO, *Standards for Internal Control in the Federal Government*, GAO/AIMD-00-21.3.1 (Washington, D.C.: Nov. 1999).

Appendix II: Overview of Department of Defense and Military Department Conference Review and Approval Authorities

This appendix provides an overview of the conference review and approval authorities the Department of Defense (DOD) and the three military departments put in place in response to the Office of Management and Budget's (OMB) May 2012 memorandum and its requirements for reviewing, approving, and reporting conferences.[1] Additional information on DOD's conference policy can be found in our January 2014 report, in which we assessed the extent to which DOD's conference policy was consistent with OMB requirements.[2]

The Deputy Secretary of Defense issued interim guidance in June 2012 and a policy memorandum in September 2012 to improve the oversight of conference costs across DOD.[3] In November 2013, the Deputy Chief Management Officer (DCMO), who had been assigned responsibility by the Deputy Secretary to implement DOD's conference policy, issued an updated conference policy.[4] In addition to the DOD-wide guidance, the three military departments also issued their own memorandums and policies regarding conference oversight, most recently in December 2013. Figure 3 depicts a timeline of when OMB, DOD, and the military departments issued their policies and guidance, along with a summary of the conference review and approval authorities.

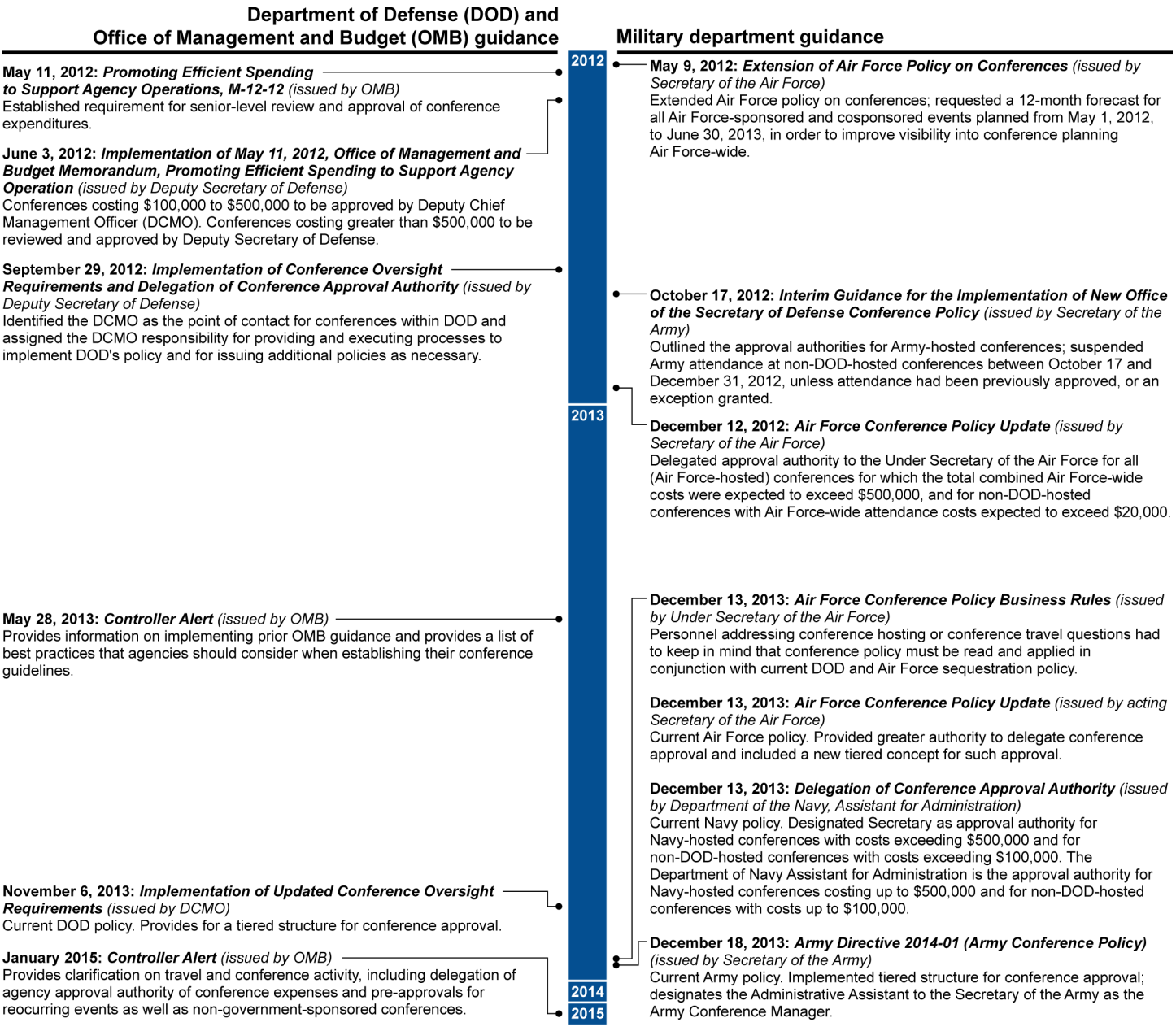
[1]Office of Management and Budget, *Promoting Efficient Spending to Support Agency Operations*, Memorandum M-12-12 (May 11, 2012).

[2]GAO, *Defense Management: DOD's Conference Policy Is Generally Consistent with OMB's Requirements*, GAO-14-150 (Washington, D.C.: Jan. 21, 2014).

[3]Department of Defense, *Implementation of May 11, 2012, Office of Management and Budget Memorandum, Promoting Efficient Spending to Support Agency Operations*, Deputy Secretary of Defense Memorandum (June 3, 2012) and *Implementation of Conference Oversight Requirements and Delegation of Conference Approval Authority*, Deputy Secretary of Defense Memorandum (Sept. 29, 2012).

[4]Department of Defense, *Implementation of Updated Conference Oversight Requirements*, Deputy Chief Management Officer Memorandum (Nov. 6, 2013).

Figure 3: Timeline of Office of Management and Budget, Department of Defense, and Military Department Guidance



Source: GAO analysis of OMB and DOD data. | GAO-15-278

Both DOD's September 2012 policy and the updated November 2013 policy provided for a tiered review and approval structure for conference requests, based on the total cost to the department and whether the conference is DOD-sponsored or non-DOD-sponsored. Table 2 shows the review and approval structure established by DOD's current conference policy as it applies to the three military departments.

Table 2: Tiered Review and Approval Structure Outlined in the Department of Defense's (DOD) Conference Policy, by Military Department

DOD review and approval tiers as established in policy	Army	Navy	Air Force
Tier One Approves DOD-sponsored conferences costing in excess of $500,000, and non DOD-sponsored conferences costing in excess of $100,000.	Secretary of the Army / Under Secretary of the Army	Secretary of the Navy / Under Secretary of the Navy	Secretary of the Air Force / Under Secretary of the Air Force
Tier Two If delegated by a Tier One official, approves DOD-sponsored conferences costing between $100,000 and $500,000, as well as for non DOD-sponsored conferences costing between $20,000 and $100,000.	Chief of Staff of the Army Vice Chief of Staff of the Army Commander, U.S. Army Forces Command Commander, U.S. Army Training and Doctrine Command Commander, U.S. Army Materiel Command Administrative Assistant to the Secretary of the Army	Chief of Naval Operations Commandant of the Marine Corps Department of the Navy / Assistant for Administration Director, Navy Staff Director, Marine Corps Staff / Staff Director, Headquarters Marine Corps	Administrative Assistant to the Secretary of the Air Force Air Force Surgeon General Commanders / Vice Commanders of Major Commands Superintendent, U.S. Air Force Academy Commander, Air Force Research Lab
Tier Three If delegated by a Tier One official, approves DOD-sponsored conferences costing less than $100,000 and non-DOD-sponsored conferences costing $20,000 or less.	General officers Flag officers Senior Executive Service members	General officers Flag officers Senior Executive Service members	General officers Flag officers Senior Executive Service members

Source: GAO analysis of DOD conference policy. | GAO-15-278

Note: DOD's tiered approval structure also specifies approval authorities for conferences sponsored by or with attendees from: the National Guard; organizations under the purview of the Office of the Secretary of Defense, Defense Agencies, and DOD Field Activities; organizations from the Office of the Secretary of Defense, Defense Agencies, and DOD Field Activities who do not report to one of the Under Secretaries of Defense; the Joint Chiefs of Staff, and the Combatant Commands.

DOD's policy permits specified senior leaders within the military departments to delegate their approval authority for DOD-sponsored

conferences costing less than $500,000. The military departments' policies are consistent with DOD's policy regarding the delegation of approval authority, but the departments have taken various approaches to the delegation. In some cases, they have not fully delegated the review and approval authorities as allowed by the current DOD policy. Specifically:

- The Secretary of the Army delegated approval authority for Army-sponsored conferences costing between $100,000 and $500,000 to six senior Army officials.
- The Secretary of the Navy delegated authority for all DOD-sponsored conferences costing less than $500,000 to the Department of the Navy Assistant for Administration.
- The Secretary of the Air Force has delegated authority for DOD-sponsored conferences with net costs between $100,000 and $500,000 to the Administrative Assistant to the Secretary of the Air Force.

DOD's policy also permits specified senior leaders within the military departments to delegate their approval authority for attendance at non-DOD-sponsored conferences costing less than $100,000. The military departments have delegated approval authorities consistently with DOD policy, but the Army and the Navy have used different approaches. Specifically:

- The Army delegated authority for non-DOD-sponsored conferences costing between $10,000 to $50,000 to the six senior officials at the Tier Two level, although DOD policy allows for non-DOD-sponsored conferences with a total cost of $20,000 to $100,000 to be approved by Tier Two authorities.
- The Secretary of the Navy delegated approval authority for all non-DOD-sponsored conferences costing less than $100,000 to the Department of the Navy Assistant for Administration.

Appendix III: Comments from the Department of Defense

OFFICE OF THE DEPUTY CHIEF MANAGEMENT OFFICER
9010 DEFENSE PENTAGON
WASHINGTON, DC 20301-9010

February 25, 2015

Ms. Johana Ayers
Director, Defense Capabilities and Management
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548-0001

Dear Ms. Ayers:

This is the Department of Defense (DoD) response to the Government Accountability Office (GAO) Draft Report, GAO-15-278, "DEFENSE SCIENCE AND TECHNOLOGY: Further DoD and DOE Actions Needed to Provide Timely Conference Decisions and Analyze Risks from Change in Conference Participation," dated January 23, 2015 (GAO Code 100008). GAO recommended the Secretary of Defense take the following two actions:

- Direct the secretaries of the military departments, in coordination with the DCMO, to establish timeframes for providing conference review and approval decisions based on applicants' needs.

- Direct the Assistant Secretary of Defense for Research and Engineering, in consultation with the DCMO, to develop a plan to analyze and periodically reevaluate the risks from changes in participation at S&T conferences for any potential effects on DoD's ability to meet its scientific mission; including identifying and collecting additional information needed to conduct this analysis.

The Department partially concurs with the first recommendation, concurs with the second recommendation, and appreciates the opportunity to respond to your draft report. Our response to the recommendations is provided in the attachment. We look forward to your continued cooperation and dialog toward our common goal of improving conference oversight and management throughout the DoD.

Should you have any questions, please contact Mr. Ryan Christianson, 703-692-8169, Ryan.M.Christianson.civ@mail.mil.

Sincerely,

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Digitally signed by TILLOTSON.DAVID.III.1109966815
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=OSD, cn=TILLOTSON.DAVID.III.1109966815
Date: 2015.02.25 17:42:30 -05'00'

David Tillotson III
Assistant Deputy Chief Management Officer

GAO DRAFT REPORT DATED JANUARY 23, 2015
GAO-15-278 (GAO CODE 100008)

"DEFENSE SCIENCE AND TECHNOLOGY: FURTHER DOD AND DOE ACTIONS NEEDED TO PROVIDE TIMELY CONFERENCE DECISIONS AND ANALYZE RISKS FROM CHANGE IN CONFERENCE PARTICIPATION"

DEPARTMENT OF DEFENSE COMMENTS TO THE GAO RECOMMENDATIONS

RECOMMENDATION 1: To help provide more timely decisions to those seeking to participate in conferences, GAO recommends the following action as part of DOD's ongoing streamlining efforts to reduce the length of its conference review and approval processes: the Secretary of Defense direct the secretaries of the military departments, in coordination with the DCMO, to establish timeframes for providing conference review and approval decisions based on applicants' needs.

DOD RESPONSE: Partially concur. The Department has undertaken significant efforts to remove constraints and streamline conference review and approval processes, and is committed to continuous improvement. Development and implementation of further solutions, which may or may not include establishing review and approval timeframes, will rely upon the collection and validation of appropriate data, and any subsequent analysis and determination of root cause(s).

RECOMMENDATION 2: To help manage the risks from changes in conference participation and any potential effects to the defense S&T enterprise, GAO recommends the following action: the Secretary of Defense direct the Assistant Secretary of Defense for Research and Engineering, in consultation with the DCMO, to develop a plan to analyze and periodically reevaluate the risks from changes in participation at S&T conferences for any potential effects on DOD's ability to meet its scientific mission, including identifying and collecting additional information needed to conduct this analysis.

DOD RESPONSE: Concur. DOD is committed to analyzing and evaluating the continued impact and, where appropriate, mitigating or eliminating risks, thereby increasing the ability of the scientific and engineering workforce to fulfill its mission.

Appendix IV: Comments from the Department of Energy

Department of Energy
Washington, DC 20585

February 24, 2015

Mr. David Trimble
Director, Natural Resources
and Environment
U.S. Government Accountability Office
Washington, D.C. 20548

Dear Mr. Trimble:

This letter provides the U.S. Department of Energy's (DOE's) response to the recommendations contained in the U.S. Government Accountability Office (GAO) draft report entitled "*GAO-15-278, DEFENSE SCIENCE AND TECHNOLOGY: Further DoD and DOE Actions Needed to Provide Timely Conference Decisions and Analyze Risks from Changes in Participation*". Please be assured that DOE takes seriously the need to balance its responsibility for serving as a steward of taxpayer dollars with the benefits that conference participation bring to fulfilling our vital scientific missions.

The Report provided two recommendations for action by the Department. We will take the necessary actions to address the recommendations in a timely manner. Enclosed is DOE's Management Decision in response to the Report's recommendations.

Sincerely,

Ingrid Kolb
Director
Office of Management

Enclosure

Printed with soy ink on recycled paper

Response to Report Recommendations

Recommendation 1: The Secretary of Energy direct DOE's Office of Management and the Administrator of the NNSA, in coordination with the relevant national lab directors, to establish timeframes for providing conference review and approval decisions based on applicants' needs.

Management Response: Concur

DOE's Office of Management and NNSA, in coordination with the national laboratory directors, will establish conference review and approval timeframes that consider applicant needs. The timeframes will also support the Department's need for a review and approval process that complies with Office of Management and Budget guidance and statutory requirements as well as the Department's responsibility to control costs and achieve mission goals.

The estimated completion date for this recommendation is July 31, 2015.

Recommendation 2: The Secretary of Energy direct the Administrator of NNSA and the relevant national lab directors, in consultation with DOE's Office of Management, to develop a plan to analyze and periodically reevaluate the risks from changes in participation at S&T conferences for any potential effects on NNSA's ability to meet its scientific mission, including identifying and collecting additional information needed to conduct this analysis.

Management Response: Concur

NNSA and the relevant national laboratory directors, in consultation with DOE's Office of Management, will develop a plan to analyze and periodically reevaluate the risks from changes in participation in conferences for any potential effects on NNSA's ability to meet its scientific mission. The plan will establish a process to identify and collect information for conducting this analysis. The Office of Management will provide advice and analysis to NNSA as well as relevant information to support the plan's development and implementation.

The estimated completion date for this activity is September 30, 2015.

Appendix V: GAO Contacts and Staff Acknowledgments

GAO Contacts

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Staff Acknowledgments

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