U.S. Department of Energy

Office of Inspector General

Office of Audits and Inspections

AUDIT REPORT

The National Nuclear Security
Administration's Network Vision Initiative

DOE-OIG-16-05   December 2015

Department of Energy
Washington, DC 20585

December 18, 2015

MEMORANDUM FOR THE SECRETARY

FROM: Rickey R. Hass
               Acting Inspector General

SUBJECT: <u>INFORMATION</u>: Audit Report on "The National Nuclear Security
               Administration's Network Vision Initiative"

BACKGROUND

The Office of Management and Budget's *25 Point Implementation Plan to Reform Federal Information Technology Management* issued in December 2010 directed that agencies should effectively manage large-scale information technology (IT) programs. To meet this goal and support its various missions, the National Nuclear Security Administration (NNSA) began implementation of a major infrastructure modernization initiative designed to enable implementation of a virtual workforce. The NNSA Network Vision (2NV) initiative consists of four major IT projects intended to provide enhanced capabilities such as networking (OneNNSA Network), identity management services (OneID), cloud-based computing technologies (YOURcloud), and collaboration and social networking services (ONEvoice) across NNSA Headquarters and field locations. When initiating the project, NNSA estimated that implementation of 2NV would result in annual savings of more than $73 million.

A prior Office of Inspector General report on *The Management of the National Nuclear Security Administration's Classified Enterprise Secure Network Project* (DOE/IG-0823, September 2009) found that planning and execution of that project was not effective and resulted in a system that did not meet pre-established goals and objectives. In addition, a prior Government Accountability Office report identified NNSA project management as an area of high risk for fraud, waste, abuse, and mismanagement. Specifically, the report identified that while progress had been made, NNSA had not fully implemented corrective actions to improve its project management practices. We initiated this audit to determine whether NNSA's 2NV initiative was adequately planned and managed and met intended goals and objectives.

RESULTS OF AUDIT

We found that implementation of various components of the 2NV initiative were significantly behind schedule and over budget. In addition, 2NV may not meet its primary objectives of enhancing collaboration among employees and implementing a fully operational cloud-based computing solution. Despite more than 4 years of effort and the expenditure of more than $22 million, we observed that:

- Although the OneNNSA Network component of 2NV was expected to be operational in June 2012, we found that the project was not implemented until December 2014, approximately 2 1/2 years behind schedule. In addition, the cost of the project was $3.3 million more than its original budget. At the time of our review, NNSA sites and laboratories also were unable to use the OneNNSA Network for sharing of data and business applications, even though this was one of the 2NV project's primary objectives. In particular, enterprise business applications, such as collaboration platforms, document management services, and assessment and oversight tracking applications, had not been installed for use on the network. As a result, these organizations did not realize anticipated efficiencies or enhanced collaboration by using the OneNNSA Network.

- NNSA estimated the YOURcloud component of 2NV would be completed in March 2012 at a cost of $3.4 million. However, we found that despite expenditures of more than $9 million, YOURcloud was not yet operational. Furthermore, officials estimated that it might cost an additional $6 million to make YOURcloud operational, resulting in a project that cost more than four times its original estimate. As part of the project's development effort, NNSA Headquarters provided significant funding to Los Alamos National Laboratory to develop a key software element of YOURcloud. Even though all of the funds were spent, the software could not be implemented at Headquarters due to development flaws and security weaknesses.

- Similar to other 2NV components, we identified weaknesses related to the implementation of ONEvoice. Specifically, ONEvoice had not yet been implemented, although plans called for it to be implemented in September 2012 at a cost of $3.7 million. At the time of our review, NNSA officials still had not developed an updated schedule to identify when the project would be operational. In addition, we determined that ONEvoice, if implemented, might not include collaboration features related to social networking as originally intended. As part of project development, officials also spent significantly more than necessary on social networking software licenses that were not used due to security weaknesses.

These issues were attributable, in part, to ineffective project planning practices related to the development and implementation of the 2NV initiative. For instance, essential components of a well-developed project management approach, such as charters, business cases, alternatives analyses, and implementation schedules, were often inadequate, outdated, or had not been developed in a timely manner. In addition, monitoring and oversight activities were not always sufficient to ensure success and hold project managers accountable for delivering the project within cost, scope, and schedule. For instance, the initiative experienced a high rate of project manager turnover that presented significant challenges to an already aggressive project schedule. In addition, several members of the project team commented that senior NNSA officials were not receptive to their concerns related to the scope, schedule, and benefits of the project, and that involvement in the project became marginalized when concerns were raised. Furthermore, various communication issues, such as reporting inaccurate project information to a Congressional Committee and NNSA senior management, may have contributed to problems related to completing the project in a timely and effective manner.

Notably, the development effort related to the OneID identity management component of 2NV was on track to be delivered within scope and according to the original schedule. OneID, when completed, is intended to create a unique identity for all NNSA Federal employees and management, as well as operating contractors, that can be used to improve security and streamline business processes associated with both physical and logical access. While this effort is encouraging, without improvements related to the other 2NV components, development will continue to be negatively affected by a lack of effective project planning, management, and oversight.

Furthermore, prior to our review, officials determined that annual estimated savings of $73 million related to 2NV were not accurate and therefore would not be realized. Officials noted that the expected amount of savings would be less than $175,000 per year. In light of the issues identified, we have made several recommendations that, if fully implemented, should enhance NNSA's IT-related project management practices.

MANAGEMENT RESPONSE

Management concurred with the report's recommendations and indicated that corrective actions had been initiated or were planned to address the issues identified in the report. Management's comments and our responses are summarized in the body of the report. Management's formal comments are included in Appendix 3.

Attachments

cc: Deputy Secretary
        Administrator for the National Nuclear Security Administration
        Deputy Under Secretary for Management and Performance
        Chief of Staff
        Chief Information Officer

AUDIT REPORT ON THE NATIONAL NUCLEAR SECURITY ADMINISTRATION'S NETWORK VISION INITIATIVE

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THE NATIONAL NUCLEAR SECURITY ADMINISTRATION'S NETWORK VISION INITIATIVE

DETAILS OF FINDING

In 2010, the National Nuclear Security Administration (NNSA) initiated development of the NNSA Network Vision (2NV) project. The 2NV initiative is a suite of four information technology (IT) projects designed to enhance collaboration among the workforce and create efficiencies in the organization's computing environment. The four projects were initiated to support NNSA's efforts to secure its network infrastructure (OneNNSA Network), implement a private cloud computing capability (YOURcloud), enhance enterprise communication and collaboration (ONEvoice), and develop and implement an enterprise-wide physical and logical identity framework (OneID).

We found that implementation of three of four components of the 2NV initiative were significantly behind schedule and over budget. In addition, the 2NV initiative may not meet its primary goals and objectives of enhancing collaboration among employees and implementing a fully operational cloud-based computing solution. Although the 2NV initiative was initially expected to be implemented in 2012, and this was later changed to 2014 with an expected cost of $17 million, we determined that officials had spent more than $22 million and more than 4 years of effort but have only implemented the OneNNSA Network component of the initiative. NNSA officials also reported that another $8.4 million will be needed to complete the project. During our review, we identified various project management weaknesses related to the development and implementation of the OneNNSA Network, YOURcloud and ONEvoice components of 2NV.

OneNNSA Network

The OneNNSA Network was to serve as the backbone for all 2NV projects using a secure corporate-wide area network and was to be fully implemented by June 2012 at a cost of approximately $330,000. However, the OneNNSA Network was implemented nearly 2 1/2 years behind schedule and cost $3.3 million more than the original budget estimate. Project planning documentation also did not include the cost of continuing operations and maintenance associated with the OneNNSA Network, which was expected to be at least $450,000 annually. Furthermore, we determined that NNSA sites and laboratories were unable to use the OneNNSA Network for sharing data and business applications with one another, one of the intended purposes of the 2NV project. Specifically, enterprise business applications, such as collaboration platforms, document management services, and assessment and oversight tracking applications, had not been installed for use on the network. Although it became operational in December 2014, the OneNNSA Network was not fully utilized because it was dependent upon other 2NV components that had not been implemented, including YOURcloud and ONEvoice.

YOURcloud

YOURcloud, a corporate NNSA cloud-based computing capability, was designed to share resources and improve efficiency of IT operations. Although the YOURcloud component of 2NV was estimated to be operational by March 2012 and cost more than $3.4 million, the project

was significantly over budget and still not implemented. Specifically, NNSA has spent more than $9 million since the beginning of 2012 on the project and estimated that more than $6 million in additional funding is needed to make YOURcloud operational.

To accelerate YOURcloud development efforts, NNSA Headquarters provided $5 million to Los Alamos National Laboratory (LANL) to modify its existing cloud computing service in anticipation that the product would be used by all of NNSA as part of 2NV. However, when LANL delivered its final software to Headquarters in March 2013, it was not until September 2013 that 2NV project officials determined that the modified solution failed to accomplish its objectives and ultimately could not be implemented. A Department of Energy (Department) review requested by NNSA Headquarters officials found that the proposed YOURcloud solution contained various flaws, including weaknesses in architecture, Web site implementation, and protection of information integrity, and ultimately concluded that LANL's deliverable was unsuitable for production without additional time and significant investment. Although Headquarters officials stated that the software was unusable, both current and former LANL officials involved with the project noted that Headquarters changed or eliminated requirements during the effort, which caused significant problems with software development. LANL also reported that project functionality was demonstrated to Headquarters officials and all project milestones and deliverables were completed on schedule. Although we were unable to reconcile the conflicting statements from LANL and NNSA Headquarters officials due to incomplete project documentation, our review concluded with certainty that $5 million was spent on software modifications that ultimately were not used to support operation of 2NV.

When project officials communicated to NNSA management that LANL's solution was not suitable for production, project officials recommended a commercial-off-the-shelf software product to provide the required cloud computing capability. While NNSA determined that this new solution satisfied most functionality, security, and cost criteria, officials identified significant gaps between the selected software and NNSA requirements. Specifically, NNSA officials stated that problems related to automation and cybersecurity would need to be addressed during deployment to appropriately secure and manage the cloud computing environment. However, officials had not developed an updated project schedule related to the changes. As such, we determined that it is likely YOURcloud will continue to be delayed.

ONEvoice

The ONEvoice component of 2NV was designed to be a suite of communication and collaboration tools built to enable employees across NNSA to connect more effectively. A key feature of the project was the use of social media software to enhance interaction among workers. However, despite initial plans for implementing ONEvoice by September 2012 at a cost of more than $3.7 million, our review identified that the initiative was not yet operational and, when completed, may not provide the anticipated social networking capabilities. Even though NNSA had spent more than $5.6 million on the project at the time of our review, there was no scheduled completion date.

Our review found that NNSA officials selected the social networking software to support the ONEvoice project without determining whether NNSA users would ultimately use it.

Specifically, NNSA spent more than $1.5 million in 2013 to acquire 48,000 software licenses to support the implementation of a social networking application. Despite being selected for its ease of deployment, the software could not be used because it did not meet baseline password and encryption security requirements for controlled unclassified information. Although project officials expected that the vendor would have these issues resolved by March 2015, the proposed use of the software was ultimately rejected due to a lack of progress by the software vendor in resolving issues. In our opinion, NNSA should have fully evaluated software security requirements and/or needs of potential end users prior to acquiring all software licenses at the beginning of the project.

Project Planning, Oversight, and Communication

The problems identified occurred, in part, because NNSA officials had not always ensured that effective project planning practices were implemented prior to developing the 2NV initiative. In addition, project monitoring and oversight was not sufficient to ensure that 2NV was implemented in accordance with estimated costs and in a timely manner. Furthermore, weaknesses in the communication process resulted in numerous miscommunications between senior officials regarding the project and may have contributed to implementation delays.

Project Planning

Officials had not ensured that effective project planning practices were followed prior to the development and implementation of the 2NV initiative. Department Order 415.1, *Information Technology Project Management*, requires that project management plans, alternative analyses, requirements documents, and schedules be developed and maintained. While some project documentation such as business cases, alternative analyses, and implementation schedules had been developed, the documentation was often incomplete, outdated, or not developed in a timely manner. For example, although a business case assessing the project's potential costs and benefits was developed in 2011, it had not been updated until October 2013, more than 1 1/2 years after a substantial scope increase that included funding LANL's YOURcloud activities and the addition of OneID. In addition, planning documentation did not accurately portray the potential cost savings related to the project. Specifically, although officials estimated approximately $73 million in annual savings when preparing justification for the project, mostly related to ONEvoice, this savings figure was reduced to less than $175,000 per year.

In addition, the business case did not fully explain how the success or failure of 2NV would be measured. For example, metrics were not established to determine whether completed projects would deliver the intended benefits. As noted by industry best practices, defining metrics and systems to track benefit delivery, realization, and sustainment are key components of project management. The project documentation also did not include planning and budgeting for the cost of maintaining support services throughout the life of the project. Specifically, project plans accounted for costs associated with the development of the initiative but did not define potential software licensing, operations, and maintenance costs beyond the first year. Although officials believed that the operations would be paid for through cost savings, we noted that no savings had been realized and that some expected cost saving components such as virtual desktop efficiencies had been removed from the scope of the project.

NNSA also had not created formal requirements for the development and acceptance of LANL's YOURcloud solution. In the absence of documented requirements, the LANL project team had to extrapolate project requirements from high-level concepts documented within the fiscal year 2012 2NV implementation. For example, although LANL officials created their own set of baseline requirements for YOURcloud, acceptance criteria for the final deliverable had not been established between LANL and NNSA Headquarters. These practices are contrary to Department Order 415.1, which requires that NNSA develop and maintain requirements documentation approved by the project manager and the customer that outlines functional, operational, and acceptance criteria.

While an alternatives analysis for the social networking component of ONEvoice had been developed to address certain technical aspects of the project, it did not include details pertaining to the ongoing/future costs or security of the software. In addition, a needs analysis to determine how many users planned to use the software had not been developed. Had officials developed a complete analysis, weaknesses related to security, cost, and user needs associated with the social networking component of ONEvoice may have been identified and addressed, resulting in fewer schedule delays and expenditures. In addition, procurement timeframes related to the project were often aggressive and unattainable. Although documentation reviewed indicated that LANL's YOURcloud solution was scheduled to be acquired and developed within 13 months, a former project official commented that it was unrealistic for a project of this size and scope to be completed in that timeframe.

Project Monitoring and Oversight

The lack of effective monitoring and oversight contributed to a number of the weaknesses identified with the development and implementation of the 2NV project. In particular, we found that a high rate of turnover of senior project officials presented significant challenges to an already aggressive project schedule. For instance, despite identifying the loss of personnel as a high risk early on in the project, several of 2NV's project champions and visionaries, including the NNSA Executive Sponsor, Program Manager, and Chief Architect, all departed during the development of the project. Furthermore, members of the project team commented that senior NNSA officials were not receptive to their concerns related to the scope, schedule, and benefits of the project. For instance, a project management official stated that when they raised technical concerns about the project and the ability to accomplish such a large scope effort in the timeframes established, a former NNSA senior manager stopped including the official in meetings and marginalized their involvement in the project. As highlighted in a recent Office of Inspector General Special Report on the *Office of Energy Efficiency and Renewable Energy's Integrated Resource and Information System* (DOE/IG-0905, April 2014), frequent turnover of key project personnel can detract from project success and contribute to an environment of confusion and low morale. While we acknowledge that staff turnover cannot always be avoided, controls such as complete project management documentation could have helped to mitigate the effects of turnover.

We also found that Federal officials had not implemented strong management oversight designed to hold project managers accountable for delivering the project within cost, scope, and schedule. For instance, a former Los Alamos Office official told us that they notified Headquarters

officials that without additional funds, the YOURcloud project could not be funded to completion. In response, Headquarters instructed LANL to finish the project and turn over the YOURcloud software in a "feature complete" and ready-to-install capacity. A former 2NV project manager told us that although NNSA Headquarters witnessed demonstrations of the software from LANL, it never accepted the product. However, notwithstanding this statement, a September 2013 memo issued by the same project manager acknowledged that LANL provided the software as "feature complete" in March 2013, but that NNSA Headquarters was unable to test the software due to delays in project funding. As a result, testing of the LANL YOURcloud solution did not occur until August 2013, when it was ultimately determined to be unsuccessful.

To its credit, NNSA issued a supplemental directive on *Project Oversight for Information Technology* (NNSA SD 415.1) in September 2014 to identify specific direction and authority for implementing the requirements of Department Order 415.1. The supplemental directive supports an approach to managing IT investments using quantifiable measurements such as benefits, risk, and progress to meet specific requirements, timeliness, and quality. While the issuance of this supplemental directive is a positive step, additional improvements related to project planning, management, and oversight are still necessary.

Communication

We also identified various communication issues that may have contributed to the weaknesses identified related to completing the project in a timely and effective manner. In particular, we identified several key instances of communication weaknesses between NNSA 2NV project officials and NNSA senior management. For example, in April 2013, a senior NNSA official informed a Congressional Committee that NNSA had successfully deployed each of the 2NV components. However, as discovered during our review, the information reported to the Committee was not accurate because the first component of the 2NV initiative was not implemented until 20 months later. Based on our review, we determined that information regarding the actual status of the initiative was readily available at the time through daily and weekly 2NV meeting minutes, as well as a 2NV project monthly status report. While we were unable to determine exactly where the breakdown in communication occurred, it may have resulted in a false impression of the initiative's progress to internal and/or external stakeholders and precluded the relevant authorities from taking corrective actions.

In another instance, a July 2013 memorandum from the 2NV project manager to a senior NNSA official indicated that NNSA had completed the development of YOURcloud at LANL and was on schedule for YOURcloud to be operational by December 2013. However, the memorandum did not disclose that significant weaknesses in architecture and security had been previously discovered during an independent review conducted in April 2013 and remained unresolved.

Schedule delays related to the OneNNSA Network occurred, in part, because verbal agreements made by high-level officials regarding operations and maintenance support were not enforceable. Although project officials explained during our review that NNSA planned to develop the network and migrate operational and cybersecurity responsibilities to the Department's Office of the Chief Information Officer (OCIO), a formally accepted transition plan documenting specific roles and responsibilities had not been established. As such, the OCIO and NNSA spent many

months negotiating the operation of the OneNNSA network even though development was completed. This issue was further complicated by the fact that the high-level officials who established the verbal agreements were no longer with NNSA or the OCIO. While these issues were ultimately overcome, they should serve as a lesson learned to facilitate more effective communication during future large-scale initiatives.

A November 2014 report by the Congressional Advisory Panel on the Governance of the Nuclear Security Enterprise echoed these issues, noting that the current Department and NNSA culture inhibited the communication of a coherent, unified message. Specifically, the panel found that there could be many competing and inconsistent messages, both internally and externally, and noted various communication problems existed within NNSA. Based on the evidence of this review and the results of our evaluation, NNSA should take steps to enhance communication and increase the likelihood that more effective monitoring of projects such as 2NV will occur.

Opportunities for Improvement

Absent well-defined project schedules and budgets that include established baselines and deliverables, NNSA runs a higher-than-necessary risk of additional delays and cost overruns for completing 2NV, as well as for other NNSA IT development efforts. In addition, inadequate communication among project officials and senior NNSA management may lead to a lack of project transparency, resulting in Department and other Federal oversight officials not receiving the necessary information to ensure the project's success. Furthermore, NNSA may continue to spend more than necessary acquiring unneeded resources and may not realize potential cost savings resulting from implementing 2NV. The issues identified in this report are similar to those highlighted in other reports issued by the Office of Inspector General and the Government Accountability Office. While responses from NNSA to these reports illustrate that NNSA is aware of the challenges it faces and has initiated action to improve project management processes, future IT projects may encounter similar challenges if corrective actions are not implemented in a timely and effective manner.

RECOMMENDATIONS

To help improve the effectiveness of the development and management of current and future IT projects, we recommend that the Administrator for the National Nuclear Security Administration:

1. Ensure that effective project management practices are implemented and adhered to, including developing and updating project documentation that defines key project deliverables, schedules, requirements, and implementation tasks;

2. Provide effective monitoring and oversight of IT projects to ensure products or services are implemented according to requirements and specifications, on time, and within budget; and

3. Ensure communication mechanisms are in place and operating effectively regarding project performance and status to Department and NNSA leadership and external stakeholders, as appropriate.

MANAGEMENT RESPONSE

Management concurred with each of the report's recommendations and indicated that corrective actions had been initiated or were planned to address the issues identified in the report. For instance, as noted in our report, NNSA issued and implemented the requirements of NNSA Supplemental Directive (SD) 415.1, *Project Oversight for Information Technology*. In addition, NNSA established an Office of Policy and Governance (OPG) within the NNSA OCIO to provide ongoing independent oversight for projects and to facilitate the consistent application of and adherence to NNSA SD 415.1. Management also indicated that NNSA implemented project monitoring activities, including quarterly review and weekly status updates, to ensure a consistent flow of information to support OPG activities. Furthermore, management stated that NNSA OCIO officials have developed and implemented a communications plan that defines a strategy for enhanced project transparency through the conveyance of accurate and timely information to NNSA and Department leadership, as well as external stakeholders.

AUDITOR COMMENTS

Management's comments and planned corrective actions were responsive to our recommendations. Management's comments are included in Appendix 3.

OBJECTIVE, SCOPE, AND METHODOLOGY

Objective

The objective of this audit was to determine whether the National Nuclear Security Administration (NNSA) Network Vision (2NV) initiative was adequately planned, managed, and met intended goals and objectives.

Scope

The audit was performed between September 2014 and December 2015 at Department of Energy (Department) and NNSA Headquarters in Washington, DC, and Germantown, Maryland; NNSA Albuquerque Complex and Sandia National Laboratories in Albuquerque, New Mexico; and Los Alamos National Laboratory in Los Alamos, New Mexico. The audit was conducted under Office of Inspector General project number A14TG064.

Methodology

To accomplish the audit objective, we:

- Reviewed laws, regulations, and directives related to project management.

- Reviewed relevant reports issued by the Office of Inspector General and the Government Accountability Office.

- Held discussions with officials from the Department and NNSA, including various Federal and contractor staff associated with the 2NV initiative.

- Reviewed project management documentation pertaining to the development and implementation of the 2NV initiative, including project management plans, project status reports, and contracts, including work authorizations.

We conducted this performance audit 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 the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. Accordingly, we assessed significant internal controls and compliance with laws and regulations to the extent necessary to satisfy the audit objective. In particular, we assessed the Department's implementation of the *GPRA Modernization Act of 2010* and determined that NNSA had not established performance measures related to 2NV development. Because our review was limited, it would not necessarily have disclosed all internal control deficiencies that may have existed at the time of our audit. We did not rely on computer-processed data to satisfy our audit objective.

Management waived an exit conference.

RELATED REPORTS

Office of Inspector General

- Special Report on *Office of Energy Efficiency and Renewable Energy's Integrated Resource and Information System* (DOE/IG-0905, April 2014). This report found that the Office of Energy Efficiency and Renewable Energy (EERE) had not adequately managed the development and implementation of the Integrated Resource and Information System (IRIS). In particular, we determined that officials had not implemented effective project management practices when developing and implementing IRIS. EERE also had not implemented essential cybersecurity controls designed to protect the system and the information it contained. In addition, our review identified concerns related to contracting practices used to support the selection and procurement of IRIS components, including the purchase of software licenses and payments for labor to support development of the system. The issues identified were due, in large part, to an accelerated planning, development, and deployment approach used by EERE officials to implement the IRIS project. In attempting to expedite the implementation of IRIS, program officials had not appropriately followed Federal requirements, Department of Energy (Department) guidance, and best practices related to system development, cybersecurity, and contract management. In addition, we determined that performance monitoring over the project was not adequate to help ensure its success.

- Audit Report on *The Management of the National Nuclear Security Administration's Classified Enterprise Secure Network Project* (DOE/IG-0823, September 2009). This report found that neither the planning for, nor execution of, the Enterprise Secure Network (ESN) project had been effective. Furthermore, the system did not meet certain pre-established goals and objectives. These issues were attributable, in large part, to problems with planning and management of the ESN effort. For example, in spite of Department requirements to the contrary, ESN planning and development did not incorporate project management controls and protections required for efforts anticipated to cost more than $20 million. As a result, the National Nuclear Security Administration (NNSA) had not properly tracked project costs for the first 7 years of the development effort. In addition, because of delays in ESN becoming operational, certain other NNSA initiatives dependent upon it, including ongoing efforts to standardize and consolidate weapons data and enforce need-to-know access across the NNSA complex, had been adversely affected.

Government Accountability Office

- Testimony on *National Nuclear Security Administration: Observations on Management Challenges and Steps Taken to Address Them* (GAO-15-532T, April 2015). This testimony states that as noted in the Government Accountability Office (GAO) 2015 high-risk report, NNSA has a long history of identifying corrective actions and declaring them successfully resolved, only to follow with the identification of additional actions. As GAO has reported, this suggests that NNSA does not have a full understanding of the root causes of its contract and project management challenges. In its prior reports, GAO

has made numerous recommendations to correct NNSA's project management problems. While NNSA has initiated some actions and made some progress, the agency has not taken action on many of these recommendations, including improving cost estimating capabilities and employing a rigorous analysis of alternatives to ensure that key capital asset and program decisions will both meet mission needs and be cost-effective.

- Report on *High-Risk Series, An Update* (GAO-15-290, February 2015). This report indicates that GAO is adding 2 areas to the high-risk areas, bringing the total to 32. One of the new high-risk areas is "Improving the Management of Information Technology (IT) Acquisitions and Operations." Specifically, it states that Congress has passed legislation and the Administration has undertaken numerous initiatives to improve management of IT investments. Nonetheless, Federal IT investments too frequently fail to be completed or incur cost overruns and schedule slippages while contributing little to mission-related outcomes. GAO reports that failed IT projects often suffered from a lack of disciplined and effective management, such as project planning, requirements definition, and program oversight and governance.

- Report on *Project and Program Management, DOE Needs to Revise Requirements and Guidance for Cost Estimating and Related Reviews* (GAO-15-29, November 2014). GAO reported that the Department's and NNSA's cost estimating requirements and guidance for projects and programs do not fully reflect best practices for developing cost estimates. Furthermore, because the Department's cost estimating guide was issued in 2011, after the Department's project order was issued, it was not referenced in the order. As a result, users of the order may not be aware of the guide's availability and may not benefit from its usefulness. In addition, although NNSA programs are required to follow the Department's budget formulation order and NNSA's budget process, both of which require the development of cost estimates, neither the order nor the process required the use of best practices in developing the estimates. In the absence of a requirement for using best practices, it is unlikely that the Department, NNSA, and their contractors will consistently develop reliable cost estimates.

MANAGEMENT COMMENTS

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

December 3, 2015

MEMORANDUM FOR RICKEY R. HASS
ACTING INSPECTOR GENERAL

FROM: FRANK G. KLOTZ 12/3/2015

SUBJECT: Comments on the Office of Inspector General Draft
Report Titled "The National Nuclear Security
Administration's Network Vision Initiative"
(A14TG064)

Thank you for the opportunity to review and comment on the subject draft report.
The National Nuclear Security Administration (NNSA) appreciates the auditors'
objective review and concurs with the Office of Inspector General's
recommendations.

Since the initial implementation of the Network Vision Initiative (2NV) project,
NNSA has carefully reassessed project requirements and realigned the
deliverables to mission and business functions. We have also implemented
several measures designed to improve project management. Most notably, we
have issued and implemented the requirements of NNSA Supplemental Directive
415.1, *Project Oversight for Information Technology,* and established the Office
of Policy and Governance within the Office of the Chief Information Officer to
provide on-going, independent oversight for our projects to ensure the principles
of the new directive are consistently applied.

We have put in place the administrative infrastructure to ensure effective
implementation of 2NV and our other IT projects going forward. The attachment
to this memorandum details the specific actions taken and planned to address each
recommendation, as well as timelines for completion. If you have any questions
regarding this response, please contact Mr. Dean Childs, Director, Audit
Coordination and Internal Affairs, at (301) 903-1341.

Attachment

NATIONAL NUCLEAR SECURITY ADMINISTRATION
Response to Report Recommendations

The National Nuclear Security Administration's Network Vision Initiative
(A14TG064)

The Office of Inspector General (OIG) recommended the National Nuclear
Security Administration (NNSA):

Recommendation 1: Ensure that effective project management practices are
implemented and adhered to, including developing and updating project
documentation which defines key project deliverables, schedules, requirements,
and implementation tasks.

Management Response: Concur

NNSA has already taken action to institutionalize corrective actions to address
this recommendation and ensure that effective project management practices are
applied to all information technology (IT) projects. Most notably, we have issued
and implemented the requirements of NNSA Supplemental Directive (SD) 415.1,
Project Oversight for Information Technology. In accordance with this new
directive, the NNSA Office of Chief Information Officer (OCIO) has
implemented standardized project management practices for our IT projects,
including proper development and update of project documentation as
appropriate. In addition, we have established the Office of Policy and
Governance (OPG) within the NNSA OCIO to provide on-going, independent
oversight for our projects to facilitate the consistent application of and adherence
to the principles of SD 415.1.

While the reforms implemented over the last year will support effective oversight
of 2NV and all of our IT projects, we will evaluate effectiveness quarterly through
Departmental Audit Reports Tracking System (DARTS) reporting, and we will
evaluate this recommendation for closure by September 30, 2016. This will allow
sufficient time to validate the sustained, effective implementation of improved
project management principles.

Recommendation 2: Provide effective monitoring and oversight of IT projects to
ensure products or services are implemented according to requirements and
specifications on time and within budget.

Management Response: Concur

As noted in our response to recommendation 1, NNSA established the OPG to
provide independent oversight and monitoring of all IT projects. Newly

implemented monitoring activities, including quarterly review and weekly status updates, ensure a consistent flow of information to support OPG activities. In addition, NNSA is finalizing its implementation approach for the Federal Information Technology Acquisition Reform Act (FITARA). Once fully implemented, these new requirements will further expand our effectiveness in managing all IT expenditures and investments, not just major projects greater than $1 million. This will also facilitate a broader strategic planning and management capability for IT investment.

We will evaluate effectiveness quarterly through DARTS reporting, and we will evaluate this recommendation for closure by September 30, 2016. This will allow sufficient time to validate the sustained, effective implementation of improved project management principles.

Recommendation 3: Ensure communication mechanisms are in place and operating effectively regarding project performance and status to Department and NNSA leadership and external stakeholders, as appropriate.

Management Response: Concur

NNSA OCIO has developed and put in place a communications plan, which defines a strategy for enhanced project transparency through the conveyance of accurate and timely information to NNSA leadership, DOE, and external stakeholders. We have also established a requirement for each project to have a supporting communications plan to provide a continued focus on transparency at all levels of project planning and execution. Additional enhancements in communication have been implemented through the activities of governance bodies such as the NNSA Requirements Oversight Council and the DOE Information Management Governance Board.

While communication mechanisms are in place, we will evaluate effectiveness quarterly through DARTS reporting, and we will evaluate this recommendation for closure by September 30, 2016. This will allow sufficient time to validate the sustained, effective communications.

FEEDBACK

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Department of Energy
Washington, DC 20585

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