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NUCLEAR REGULATORY COMMISSION
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OFFICE OF THE
INSPECTOR GENERAL

MEMORANDUM TO: Chairman Svinicki

FROM: Hubert T. Bell
Inspector General

SUBJECT: INSPECTOR GENERAL'S ASSESSMENT OF THE MOST SERIOUS MANAGEMENT AND PERFORMANCE CHALLENGES FACING THE NUCLEAR REGULATORY COMMISSION IN FISCAL YEAR 2018 (OIG-18-A-01)

In accordance with the *Reports Consolidation Act* of 2000, I am providing what I consider to be the most serious management and performance challenges facing the NRC in FY 2018. Congress left the determination and threshold of what constitutes a most serious management and performance challenge to the discretion of the Inspectors General. I have defined serious management and performance challenges as *mission critical areas or programs that have the potential for a perennial weakness or vulnerability that, without substantial management attention, would seriously impact agency operations or strategic goals.*

INTRODUCTION

NRC is an independent Federal agency established to license and regulate the Nation's civilian use of radioactive materials to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment.

NRC performs critical functions to ensure the safe and secure use of radioactive materials in the United States and to protect both the public and radiation workers from radiation hazards that could result from the use of radioactive materials. NRC provides licensing and oversight activities for approximately 100 commercial nuclear power

reactors; research, test, and training reactors; and radioactive materials used in medicine, academia, and industry.

NRC's principal regulatory functions are to establish regulatory requirements and conduct confirmatory research to support requirements; issue licenses to facility operators and owners, possessors, and users of nuclear materials; oversee these licensees to ensure they are in compliance with NRC requirements and operate safely and securely; and respond to emergencies involving regulated activities. NRC also participates in international work that is integral to the agency's mandate to protect public health and safety and promote the common defense and security. To carry out its mission, NRC's FY 2018 proposed budget is approximately $952 million, including 3,284 full-time equivalent positions.

Based on NRC's mission and objectives, the Office of the Inspector General (OIG) annually identifies what it considers to be the most serious management and performance challenges facing NRC. Our goal is to focus attention on these issues to enhance the effectiveness of NRC programs and operations.

MANAGEMENT CHALLENGES

The FY 2018 management and performance challenges are directly related to NRC's mission areas (commercial nuclear reactors and nuclear materials) and address security, information technology, financial programs, and administrative functions. Our work in these areas indicates that while program improvements are needed, NRC is continually making progress to address OIG recommendations and improve the efficiency and effectiveness of its programs. The FY 2018 management and performance challenges are as follows:

1. Regulation of nuclear reactor safety programs.
2. Regulation of nuclear materials and radioactive waste programs.
3. Management of security over internal infrastructure (personnel, physical, and cyber security) and nuclear security.
4. Management of information technology and information management.
5. Management of financial programs.
6. Management of administrative functions.

These challenges represent what OIG considers to be inherent and continuing program challenges relative to maintaining effective and efficient oversight and internal

management controls. As a result, some are likely to remain challenges from year to year, while others may be removed from the list as progress is made toward resolution. Challenges do not necessarily equate to problems, rather, they should be considered areas of continuing important focus for NRC management and staff.

Attached is a brief synopsis of each management and performance challenge along with summaries of OIG audits and planned work that has informed the decision-making process. A complete list of reports can be found at: https://www.nrc.gov/reading-rm/doc-collections/insp-gen/2017/

1. Regulation of nuclear reactor safety programs.

NRC is responsible for maintaining an established regulatory framework for the safe and secure use of civilian nuclear reactors, including commercial nuclear power plants as well as research, test, and training reactors. There are currently 99 civilian nuclear power reactors licensed to operate in the United States, which generate about 20 percent of the nation's electricity, as well as 2 plants under construction (Vogtle 3 and 4) There are also 31 licensed research and test reactors. NRC's regulatory oversight responsibilities in the reactor arena include developing policy and rulemaking; licensing and inspecting reactors; licensing reactor operators; and enforcing regulations. Based on its control points, the agency implemented its nuclear reactor safety program in Fiscal Year 2017 with approximately 49 percent ($462.3 million, including $5 million for Advanced Reactor Infrastructure Activities) of its total budget authority, including carryover, and 60 percent (2,048 full-time equivalent employees) of its total staff. Thus, it is of paramount importance that the agency implement these programs as effectively and efficiently as possible.

Key reactor safety oversight challenges for NRC include the following:

- Ensuring an adequate and efficient reactor and operator licensing process, accounting for safety impacts of major changes to plant configuration, and sufficiently evaluating older plants for license extensions.
- Providing an adequate number of trained inspectors for sufficient oversight, and ensuring inspection procedures are adequate and are being followed.
- Ensuring adequate construction oversight of new power reactors, adequately reviewing and approving design changes that are occurring concurrent with the construction, and verifying whether plants are built in accordance with the intended design.
- Ensuring appropriate and reasonable application of the agency's Reactor Oversight Process, Construction Reactor Oversight Process, Significance Determination Process, generic requirements and backfit process, safety culture policy, and Alternative Dispute Resolution.

- Incorporating operational experience from the domestic and international nuclear industries into NRC's regulatory program, and identifying generic requirements.

The following synopses are examples of work that OIG has completed or is ongoing pertaining to nuclear reactor safety programs.

Audit of NRC's Fire Protection Oversight for Operating Reactors
OIG-17-A-10, April 11, 2017

NRC staff at headquarters and regions oversee fire protection at commercial nuclear power plants. NRC headquarters staff perform safety evaluations associated with fire protection regulations, develops regulations and regulatory guidance, and supports application of the fire protection regulations at the regional level. NRC regional inspectors perform in-depth fire protection inspections every 3 years. These inspections include an examination of fire plans, electrical cable separation, operating procedures, and fire procedures to ensure plant personnel can safely shut down a plant during a fire. NRC resident inspectors assigned to nuclear power plants perform quarterly and annual inspections that focus on firefighting capabilities such as fire suppression equipment, fire barriers and fire brigade drills.

The audit objective was to assess the consistency of NRC's oversight of fire protection programs at operating nuclear power plants.

Our review found opportunities for NRC to improve the consistency of its fire protection oversight by ensuring (1) specific regulatory requirements for individual nuclear plants are clear to cognizant staff, and (2) documentation of inspection insights from discussions of issues that do not result in findings or violations.

Agency management stated their general agreement with the findings and recommendations in this report.

The full report is available at: https://www.nrc.gov/docs/ML1710/ML17101A737.pdf

Audit of NRC's Oversight of Employee Participation in American Society of Mechanical Engineers Code Committees
OIG-17-A-11, April 26, 2017

NRC participates in American Society of Mechanical Engineers (ASME) code committees as part of its responsibilities under the *National Technology Transfer Act* of 1995. ASME is a non-profit professional organization that develops technical codes for the public and private sectors and includes a range of public and private sector employees. ASME codes are used in connection with technical standards for design, construction, and maintenance for commercial nuclear power plants. We undertook this work based on awareness of the potential lack of internal controls for managing committee participation in the areas of management oversight, monitoring, coordination, and guidance.

The audit objective was to assess NRC's oversight and compliance with applicable law, regulation, and policy relating to NRC employee participation in ASME code committees.

We found that NRC generally complies with applicable law, regulation, and policy pertaining to participation in ASME code committees. However, we recommended that management oversight of staff participation be improved by strengthening recordkeeping practices and internal controls for staff adherence to NRC ethics policies.

NRC management stated their agreement with the findings and recommendations in this report.

The full report is available at: https://www.nrc.gov/docs/ML1711/ML17116A103.pdf

Audit of NRC's 10 CFR 2.206 Petition Review Process
OIG-17-A-23, August 22, 2017

Since the agency was established in 1975, NRC has encouraged members of the public to use Title 10, Code of Federal Regulations, Section 2.206, *Requests for Action Under This Subpart* (10 CFR 2.206) as one method to bring issues to the agency's attention. Any person may file a request by using 10 CFR 2.206 to institute a proceeding to modify, suspend, or revoke a license, or for any other action as may be proper.

The audit objective was to determine whether NRC staff followed agency guidance consistently in reviewing 10 CFR 2.206 petitions, and took steps to ensure appropriate information supports NRC decisions on 10 CFR 2.206 petitions.

NRC committed to periodically assess the 10 CFR 2.206 petition process to enhance its effectiveness, timeliness and credibility. However, our review found that NRC did not perform periodic assessments because it has not established management controls to ensure periodic assessments of the 10 CFR 2.206 petition process are performed. As a result, NRC missed opportunities to use data to enhance the 10 CFR 2.206 petition process. In addition, we found that NRC staff have difficulty applying 10 CFR 2.206 petition review and rejection criteria because the criteria are not clear. As a result, some petitions might not be dispositioned consistently or properly.

The audit report recommended that NRC (1) develop controls to ensure formal assessments are performed and are documented for future use, and (2) clarify the criteria for reviewing and rejecting petitions.

Agency management stated their general agreement with the findings and recommendations in this report.

The full report is available at: https://www.nrc.gov/docs/ML1723/ML17234A561.pdf

Evaluation of Proposed NRC Modifications to the Probabilistic Risk Assessment Process, OIG-17-A-26, September 21, 2017

The NRC and its licensees use the Probabilistic Risk Assessment (PRA) process to estimate the risk of potential accidents at nuclear power plants. PRA is a structured, analytical process for identifying potential weaknesses and strengths of plant designs and operations in an integrated fashion. PRA considers accident scenarios to determine what can go wrong, the likelihood of occurrence, and the consequences for people and the plant. NRC has a tool to estimate risk at nuclear power plants known as Standardized Plant Analysis Risk (SPAR) Model Development Programs. SPAR models are used by NRC staff in support of risk-informed activities.

The OIG evaluation objective was to assess NRC's process for piloting alternative risk modeling techniques including analyzing costs, benefits, and feasibility of these alternatives.

Although preliminary staff assessments showed credible cost and feasibility limitations to adopting industry risk models, NRC has yet to document the results of this work and use it as the basis for a formal agency position. These actions are particularly important in the current regulatory climate, which emphasizes risk-informed decision-making.

OIG made a recommendation to improve the process for assessing alternatives to using SPAR models. Specifically, OIG recommends in this report that the Executive Director for Operations formally document evaluation results that will establish the agency position on NRC's use of licensee PRA models, to include reliable, verifiable cost data.

NRC management stated their agreement with the findings and recommendation in this report and opted to provide formal comments for inclusion in this report.

The full report is available at: https://www.nrc.gov/docs/ML1726/ML17264A298.pdf

2. Regulation of nuclear materials and radioactive waste programs.

NRC is responsible for maintaining an established regulatory framework for the safe and secure use of nuclear materials; medical, industrial, and academic applications; uranium recovery activities; and high-level and low-level radioactive waste. NRC is authorized to grant licenses for the possession and use of radioactive materials and establish regulations to govern the possession and use of those materials. NRC's oversight of material licensees is done through its regional offices; specifically, Region I, Region III, and Region IV. Region I handles the oversight for licensees in the Region II area.

Upon a State's request, NRC may enter into an agreement to discontinue its authority to the State to regulate certain radioactive materials and limited quantities of special nuclear material. The State must demonstrate that its regulatory program is adequate to protect public health and safety and compatible with NRC's program. The States that enter into an agreement assuming this regulatory authority from NRC are called Agreement States. Currently, there are 37 Agreement States and two States that have submitted draft applications to become Agreement States.

NRC regulates high-level radioactive waste generated from commercial nuclear power reactors. High-level radioactive waste is either spent (used) reactor fuel when it is accepted for disposal or waste material remaining after spent fuel is reprocessed. Because of its highly radioactive fission products, high-level radioactive waste must be handled and stored with care. Since radioactive waste becomes harmless only through decay (which can take hundreds of thousands of years for high-level waste), the material must be stored and ultimately disposed of in a way that provides adequate protection of the public for a very long time. Due to the lack of a permanent repository for high-level radioactive waste in the United States, NRC continues to deal with the issues associated with storing high-level radioactive waste at Independent Spent Fuel Storage Installations across the country for the foreseeable future.

Low-level radioactive waste is typically produced at nuclear power reactors, hospitals, research facilities, and clinics from the use of nuclear materials for industrial and medical purposes. NRC regulates the management, storage, and disposal of radioactive waste produced as a result of NRC-licensed activities. Low-level

radioactive waste includes contaminated protective clothing, equipment and tools, medical supplies, and laboratory animal tissues. Currently, all of the country's disposal facilities are located in Agreement States.

In addition, the number of nuclear power reactors being decommissioned may continue to increase in the coming years as more reactors reach the end of their licensed life or face challenging financial conditions. The decommissioning of nuclear power reactors continues to be a challenge for NRC and many licensees.

A large number of materials licenses are also terminated each year. Most of these license terminations are routine, and the sites require little remediation to meet NRC's criteria for unrestricted release. However, some of these decommissioning facilities present technical and policy challenges that could require large expenditures of NRC staff resources.

Key nuclear materials and radioactive waste oversight challenges for NRC include the following:

- Ensuring that licensing activities are conducted consistent with NRC requirements.
- Providing effective oversight of licensees' radioactive materials programs to preclude loss or theft.
- Staying current with emerging technologies, particularly with medical uses of radioactive materials.
- Tracking radioactive materials.
- Ensuring that nuclear materials are safe and accounted for during exporting and importing activities.
- Ensuring that Agreement State programs are adequate to protect public health and safety and the environment, and are compatible with NRC's program.
- Providing effective oversight for the safe and secure interim storage of increasing quantities of high-level radioactive waste until a permanent repository for high-level radioactive waste is operational.

- Ensuring the management of licensee programs for the safe storage and disposal of low-level radioactive waste produced as a result of NRC-licensed activities.

- Managing complex decommissioning activities.

The following synopses are examples of work that OIG has completed or has underway in the nuclear materials and radioactive waste programs.

Audit of NRC's Oversight of Source Material Exports to Foreign Countries
OIG-17-A-08, February 16, 2017

One of the agency's statutorily mandated responsibilities under the Atomic Energy Act of 1954, as amended, is to license the import and export of nuclear materials. Source material is often exported to be enriched and used as fuel for nuclear power plants across the world. As source material (uranium) could potentially be enriched to produce highly enriched uranium – the primary ingredient of an atomic weapon – tracking and accounting for the exports of source material are important to (1) ensure that it is used only for peaceful purposes, (2) comply with international treaty obligations, and (3) provide data to policymakers and other government officials.

The audit objective was to determine the effectiveness of NRC's oversight of the export of source material.

OIG found that NRC provides effective oversight of source material exports in coordination with other Federal agencies; however, opportunities for improvement exist within NRC's internal processes.

NRC does not perform source material export prelicensing site visits or inspections even though one of NRC's principal regulatory functions – oversight – consists of inspections and performance assessment. This occurs because NRC does not require site visits or inspections. Without prelicensing site visits or inspections, NRC cannot confirm if export applicants are legitimate and does not have the assurance licensees are in compliance with export regulations. Additionally, NRC does not verify if some export applicants have a certain required NRC license, nor does NRC enforce the requirement that export carriers be listed on export applications. This gap is due to some ambiguity in the export regulations and the lack of a formalized training program for export licensing officers.

This report made recommendations to improve NRC's oversight of the export of source material. The recommendations would have NRC (1) create an export inspection program, (2) clarify specific NRC regulations related to exports, and (3) create a qualification program for export licensing officers.

Agency management does not entirely agree with the findings and recommendations. Agency comments are included in Appendix E of the report.

The full report is available at: https://www.nrc.gov/docs/ML1704/ML17047A540.pdf

Audit of NRC's Oversight for Issuing Certificates of Compliance for Radioactive Material Packages
OIG17-A-21, August 16, 2017

The Nuclear Regulatory Commission (NRC) issues certificates of compliance to approve the design of a (1) package for transportation of radioactive material or (2) cask for spent fuel storage. A transportation package includes the assembly of components necessary to ensure compliance with packaging requirements and the radioactive contents as presented for transport. A spent fuel storage cask is a heavily shielded container using lead, concrete and/or steel in order to provide dry storage of spent fuel assemblies.

The audit objective was to determine if NRC's processes for issuing certificates of compliance and reviewing 10 CFR Part 72.48 changes provide adequate protection for public health, safety, and the environment.

OIG found that NRC processes for issuing certificates of compliance are adequate; however, opportunities for improvement exist within NRC's internal processes. Specifically, NRC should (1) determine and provide the basis for an appropriate term for Part 71 certificates of compliance and (2) establish sufficient controls for Part 72.48 reviews.

NRC should regulate in a manner that clearly communicates requirements and ensures that regulations incorporate an assessment of safety significance or relative risk. Title 10 Code of Federal Regulations Part 71 (Part 71) establishes the requirements for the transportation of radioactive material packages that apply to any holder or applicant for a transportation certificate of compliance. NRC issues transportation certificates of compliance for a period of 5 years. However, NRC does not have regulatory or technical bases to support the 5-year term. As a result, the agency is imposing a regulatory requirement without clearly assessing the importance to safety or the potential burden imposed on NRC staff and the certificate holders.

Additionally, NRC management and staff are responsible for providing and following effective procedures to ensure implementation of agency policies. However, there are insufficient internal controls to ensure internal guidance is consistently followed. As a result, NRC may not detect Part 72.48 changes that should have been submitted as amendment requests.

This report made recommendations to improve NRC's oversight for issuing certificates of compliance for radioactive material packages.

NRC Management agreed with the findings and recommendations in this report.

The full report is available at: https://www.nrc.gov/docs/ML1722/ML17228A217.pdf

Audit of NRC's Oversight of the National Materials Program
(*Ongoing audit*)

The National Materials Program (NMP) is a term that has been used for many years, to define the broad collective framework within which both NRC and the Agreement States function in carrying out their respective radiation safety regulatory programs. This framework also includes the Organization of Agreement States and the Conference of Radiation Control Program Directors, Inc.

The focus of the NMP is the shared program activities between NRC and Agreement States and the ability of Agreement States to assume a greater proportional responsibility for the shared program activities. The scope of the NMP covers Atomic Energy Act materials, which are currently regulated by NRC and Agreement States.

Per NRC Commission direction, NRC and the Agreement States continue to collaboratively address materials issues within the constraints of available resources. Currently, there are 13 non-Agreement States and 37 Agreement States. Two of the non-Agreement States have submitted draft applications to become Agreement States in some capacity.

NRC has been developing and piloting the NMP for decades, which reflects the evolving relationship between NRC and the Agreement States. This relationship has been evolving as more States become Agreement States. NRC and Agreement States continue to be challenged with the ability to deal with the NMP environment that is constantly evolving such as changes in priorities for regulatory needs and fiscal conditions.

The audit objective is to determine if the National Materials Program is an effective and efficient framework for carrying out NRC and Agreement State radiation safety regulatory programs.

3. Management of security over internal infrastructure (personnel, physical, and cyber security) and nuclear security.

NRC must remain vigilant with regard to the security of its infrastructure and that of nuclear facilities and nuclear materials. NRC must continue to use robust, proactive measures to protect its infrastructure – the buildings, personnel, and information – from both internal and external threats. Moreover, as the nature of the threat continues to evolve, NRC faces challenges with oversight of protecting operating and decommissioned nuclear facilities and nuclear materials, the sharing of sensitive information, as well as emergency preparedness and incident response.

Key security oversight challenges for NRC include the following:

- Increasing numbers, types, and sophistication of cyber threats underscore the need to reinforce the security over NRC's information systems. For example, advanced persistent threats where an adversary that possesses sophisticated levels of expertise and significant resources can attack using multiple means such as cyber, physical, or deception to achieve its objectives, pose increasing risks.

- Directing agency-wide information resource planning to ensure that agency information technology, information management, and information technology security resources are selected and managed to provide maximum value to the agency.

- Executing the insider threat prevention and detection program for detecting, deterring, and mitigating insider threats to address protection of classified and safeguards information from exploitation, compromise, or unauthorized disclosure.

- Continuing to pursue the need for new regulations focused on unique requirements of decommissioned nuclear power plants, which present different security considerations than operating plants.

- Ensuring effective oversight of physical and personnel security at nuclear power plants.

- Executing the Federal Information Security Modernization Act of 2014, to strengthen the security of computer networks.

The following synopses are examples of work that OIG has completed in the agency's security programs.

Audit of NRC's Foreign Assignee Program
OIG-17-A-07, December 19, 2016

Under the foreign assignee program, the NRC invites peers from other nuclear safety regulators to obtain experience that would enhance safety programs and research programs worldwide, as well as promote exchange of technical information and expertise. Foreign assignees remain employees of the sponsoring regulatory or research organization in their home country. Approximately 80 foreign nationals have worked as assignees at NRC since 2005, representing 21 countries.

The objective of this audit was to assess whether the NRC foreign assignee program provides adequate information security.

Existing foreign assignee program policies establish controls for protection of and access to information within the foreign assignee program. However, improvements are needed to better implement policies and strengthen information security. For example, information security requirements for the foreign assignee program are not implemented consistently, because there is no specific procedure to guide implementation of those requirements. As a result, program offices may not be able to maintain adequate information protection.

In addition, foreign assignees use a non-NRC, external email address while working at NRC. Foreign assignees do not have an NRC email address because that would require access to the internal local-area network and foreign assignees do not meet the access standard to use NRC's network. The use of external email presents a potential risk of an unintentional spillage of information that should be protected.

The report made recommendations to develop a procedure for security planning during the process of onboarding and hosting a foreign assignee and to provide a secure, cost-effective email for the use of foreign assignees at NRC.

NRC management agreed with the report's findings and recommendations.
The full report is available at: https://www.nrc.gov/docs/ML1635/ML16354A662.pdf.

Audit of NRC's Oversight of Security at Decommissioning Reactors
OIG-17-A-09, February 09, 2017

Decommissioning is the process used to safely remove a nuclear power plant from service and reduce residual radioactivity to a level that permits release of the property and termination of its license. NRC has rules governing power plant decommissioning that protects workers and the public during the decommissioning process. For example, NRC regulations require power plant licensees to establish, maintain, and implement an insider mitigation program. Other NRC regulations are designed to ensure licensees effectively manage worker fatigue and provide reasonable assurance that workers are able to safely and competently perform their duties.

The audit objective was to determine whether NRC's oversight of security at decommissioning reactors provides for adequate protection of radioactive structures, systems, and components.

NRC's oversight of security at decommissioning reactors provides for adequate protection of radioactive structures, systems, and components. However, NRC regulations lack clarity on which elements of fitness-for-duty decommissioning licensees must implement. In addition, NRC lacks regulatory requirements for a fatigue management program for decommissioning licensees.

However, NRC is currently taking steps to address the issues. Presently, there are ongoing rulemaking efforts in the area of decommissioning. Additionally, NRC recently finalized a report to document lessons learned associated with permanent power reactor shutdowns that occurred from 2013 – 2016.

The report made recommendations to clarify which fitness-for-duty elements decommissioning licensees must implement to meet the requirements of the insider mitigation program; and to establish requirements for a fatigue management program.

NRC Management agreed with the findings and recommendations in this report.

The full report is available at: https://www.nrc.gov/docs/ML1705/ML17053A022.pdf

4. Management of information technology and information management.

Technology advances rapidly. The challenge is supporting a future-ready workforce equipped with modern tools, technologies, skills, and knowledge necessary to meet both current and future mission needs. NRC must also meet the regulatory and statutory federal mandates for Information Technology/Information Management (IT/IM). The responsibility of the NRC's IT/IM program is to maintain and enhance services and infrastructure to enable the mission. This goal reflects the NRC's commitment to openness and is essential for effective agency operations.

Key information technology and information management challenges for NRC include the following:

- Ensuring that data is securely accessible from anywhere, at any time, on any device to support the agency's workforce.

- Leveraging innovative technologies to coordinate, securely share, and collaborate on information with both domestic and international partners.

- Managing risk-based information security strategies to protect against sophisticated cyber-attacks.

The following audit report synopses are examples of work that OIG has completed in the IT/IM programs.

Audit of NRC's Adoption of Cloud Computing
OIG-17-A-16, June 20, 2017

Adoption of cloud computing became Federal policy in 2010. Cloud computing is defined as a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources.

The audit objective was to assess whether NRC's adoption of cloud computing is adequately managed.

NRC has not had a cohesive approach to cloud adoption. Federal and NRC guidance emphasize management's role in providing objectives, resources, and oversight for information technology (IT) projects. However, until 2016, NRC management's focus on the agency's data centers substituted for an effective cloud strategy.

For example, NRC management committed to consolidating two older data centers into its new Three White Flint North data center. The decision was made without completing a cloud alternatives study that would have not only defined a basis for determining which options best met NRC's requirements, but also provided complete cost analysis of cloud and internal options. The consolidation resulted in resources that are not scalable, rapidly provisioned, or shared.

Further, it did not realize expected operating cost savings. Due to a lack of cost analysis in the beginning, it is not clear whether the project's modernization benefits were worth the additional cost, or whether the same benefits could have been achieved at a lower cost while also enabling the adoption of effective cloud solutions.

The report made recommendations to (1) develop guidelines to ensure that cloud services acquisitions rely on thorough project planning, and (2) train NRC information technology and acquisitions staff to manage new models of service delivery.

NRC management agreed with the report's findings. As part of NRC's current IT contracting effort, NRC management stated the agency will implement actions responsive to the recommendations.
The full report is available at: https://www.nrc.gov/docs/ML1717/ML17171A136.pdf

Evaluation of NRC's Network Storage Interruption
OIG-17-A-19, July 27, 2017

On November 16, 2016, at 4:45 a.m., NRC's Network Operations Center identified that access was lost to key information technology (IT) services, including availability to the network, remote access, internet, email and servers (file, print, and applications). The network outage resulted in NRC excusing headquarters employees for the entire workday on November 17, 2016, and for 2 hours on November 18, 2016. It cost NRC an estimated $941,739 to grant employees administrative leave for this time.

The objective of this audit was to evaluate the NRC network storage service interruption that occurred on November 16, 2016, and identify opportunities for improvement and solutions moving forward.

OIG evaluated the network storage interruption and its effect on agency operations, and identified opportunities for improvement in how NRC manages its IT services contract. OIG found weaknesses in the following areas:

1. The contract modification process. Specifically, NRC inadvertently modified the IT services contract disincentive fee.
2. Administration of the IT services contract. Specifically, NRC allowed the contractor to make all decisions on the data center storage system architecture.

Additionally, OIG identified multiple issues with how the IT services contract was written and overseen. These issues relate to the number and relative weight of the Service Level Requirements included in the contract and the lack of associated penalties. Service Level Requirements are agreements between a service provider and end user that defines the level of service expected.

The report made recommendations to improve NRC's processes, procedures, and operations under the next IT services acquisition (GLINDA).

NRC management agreed with the report's findings and recommendations and plans to take action to address the recommendations.

The full report is available at: https://www.nrc.gov/docs/ML1720/ML17208A031.pdf.

5. Management of financial programs.

NRC is required by the *Omnibus Budget Reconciliation Act* of 1990 to collect fees totaling approximately 90 percent of its annual budget authority. The agency's budget authority for FYs 2016 and 2017, including carryover, was approximately $1,006 million and $940 million, respectively. The NRC estimated that $882.9 million for FY 2016 and $804.6 million for FY 2017 should be recovered from invoiced fees. NRC is required to establish a schedule of charges that fairly and equitably assesses the fees to license holders and license applicants. In recent years, multiple external stakeholders have questioned NRC's budget and fee structure. Moreover, in recent years, NRC has been reducing its budget and full-time equivalents. In recent years, NRC has initiated projects to improve its fee calculation process and fee billing structure. To maintain transparency, NRC must continue to implement solid internal controls over financial management and reporting.

Key financial management and reporting challenges include the following:

- Developing and implementing the agency's budget in accordance with Federal laws, regulations, and guidelines.
- Maintaining a fee structure in accordance with laws and regulations and that is fair to agency licensees.
- Improving controls over license fee billing.
- Maintaining effective controls over financial reporting, contracts, and grants.

The following audit report synopses are examples of completed or planned OIG work pertaining to financial programs.

Audit of NRC's Compliance with Improper Payments
OIG-17-A-13, May 11, 2017

On July 22, 2010, the *Improper Payments Elimination and Recovery Act of 2010* (IPERA) was signed into law, which amended the *Improper Payments Information Act of 2002* (IPIA). IPERA directed OMB to issue implementing guidance to agencies. IPERA also requires Federal agencies to periodically review all programs and activities that the agency administers and identify all programs and activities that may be susceptible to significant improper payments. In addition, IPERA requires each agency to conduct recovery audits with respect to each program and activity of the agency that expends $1,000,000 or more annually, if conducting such audits would be cost effective. The *Improper Payments Elimination and Recovery Improvement Act of 2012* (IPERIA) was signed into law on January 10, 2013. IPERIA established the Do Not Pay Initiative, which directs agencies to verify the eligibility of payments using databases before making payments. On October 20, 2014, OMB issued Memorandum M-15-02, Appendix C to Circular No. A-123, Requirements for Effective Estimation and Remediation of Improper Payments.

OMB guidance also specifies that each agency's Inspector General should review agency improper payment reporting in the agency's annual Performance and Accountability Report or Annual Financial Report, and accompanying materials, to determine whether the agency complied with IPERA.

OIG conducted this audit to assess NRC's compliance with the IPIA, as amended by IPERA, and IPERIA and report any material weaknesses in internal control.

OIG determined that the agency is in compliance with the requirements of IPIA. OIG also concluded that agency reporting of improper payments is accurate and complete.

However, this report makes one recommendation regarding questioned costs that were identified during a contract audit performed by the Defense Contract Audit Agency (DCAA) on behalf of OIG.

NRC management reviewed the draft memorandum report and had no comments.

The full report is available at: https://www.nrc.gov/docs/ML1713/ML17131A214.pdf

Audit of NRC's Process for Managing Intra-Government Payment and Collection System Payments
(To be initiated in FY 2018)

Federal agencies frequently provide services to other agencies. These services require an exchange of money when the agencies enter into an agreement and services are performed. Federal agencies use the Department of Treasury's Intra-Government Payment and Collection (IPAC) system to transfer funds from one agency to another with standardized descriptive data. While the Department of Treasury administers the IPAC system, NRC has to ensure that transactions in the system are accurate and paid in a timely manner. NRC processes approximately $80 million a year through the IPAC system. The agency's Office of the Chief Financial Officer receives the IPAC payment or reimbursement request and then forwards the IPAC action to the corresponding NRC Contracting Officer's Representative (COR) for review and approval.

In recent years, there have been concerns about IPAC payment requests being sent to incorrect NRC CORs, payments not being submitted in a timely manner, and insufficient data being provided to review IPAC transactions.

The audit objective is to assess whether NRC has established and implemented an effective process to ensure that IPAC payments are processed in a timely and accurate manner.

6. Management of administrative functions.

NRC should continue exploring ways to gain administrative efficiencies while maintaining the appropriate corporate support to carry out agency operations. During FY 2017, NRC workforce totaled approximately 3,300 staff positions. To support the agency's technical staff, NRC provides corporate support services such as contract support and multiple human resource programs. While NRC has implemented multiple programs to support agency staff, NRC continues to operate in a Federal Government environment of stagnant or reduced agency budgets, and increasing pressure to reduce corporate support costs. Because of this, the agency needs to have an appropriate balance between administrative functions and technical needs. In addition, NRC must be able to effectively recruit, train, and transfer knowledge to new hires, if applicable. This includes maintaining up-to-date guidance to effectively transfer knowledge and train current staff. NRC initiated Project Aim with the purpose of, among other things, identifying inefficiencies in work processes, and right-sizing the agency to retain skill sets needed to accomplish the agency's mission.

Key NRC corporate support function challenges include the following:

- Reducing related costs while continuing to provide essential administrative functions that help the agency carry out its mission.

- Maintaining agency headquarters operations while complying with Federal space utilization guidelines and carbon footprint reduction targets.

- Recruiting, training, and effectively transferring knowledge to NRC new hires, if applicable.

- Providing current staff with the training and tools to maintain and/or improve the skills needed to effectively perform their jobs.

- Keeping NRC policies and procedures current.

The following audit report synopses are examples of work that OIG will conduct that pertain to NRC's administrative functions.

Audit of NRC's Program Management, Policy Development and Analysis Division (PMDA) and Division of Resource Management and Administration (DRMA) Functions to Identify Program Efficiencies
OIG-17-A-18, July 3, 2017

Many NRC offices maintain corporate support through PMDA and DRMA functions. The PMDA function at NRC headquarters and the DRMA function at NRC regional offices manage service delivery in support areas.

The audit objective was to determine if the activities performed by NRC's PMDA and DRMA programs produce the intended results from their operational processes in a manner that optimizes the expenditure of agency resources.

Since the realignment between regional and headquarters PMDA and DRMA functions, administrative functions have not been performed in a manner consistent with policies and procedures governing the revised processes, roles, and responsibilities. For example, in the absence of an NRC approved policy or procedure, some PMDA and DRMA offices created their own respective processes for supporting budget formulation. In those instances, processes were not consistent with the established agency-wide budget formulation process.

While policies and procedures for budget formulation exist, the objectives of the related recommendation are to (1) clearly establish and document roles and responsibilities for all individuals managing or supporting budget formulation activities, (2) gain a mutual understanding of centralized budget formulation activities within the Office of the Chief Financial Officer (OCFO), and (3) ensure consistent office processes for budget formulation, as well as a streamlined and reduced effort for developing formulation deliverables.

The report made a recommendation to complete implementation of all Mission Support Task Force recommendations that may assist in optimizing the use of resources and result in improving standardization and centralization throughout the agency. Management is in agreement with the finding and recommendation in this report.

The full report is available at: https://www.nrc.gov/docs/ML1718/ML17184A101.pdf

Audit of NRC's Contract Administration Process
OIG-17-A-20, August 16, 2017

The Federal Acquisition Regulation and Nuclear Regulatory Commission's (NRC) Management Directive 11.1, *NRC Acquisition of Supplies and Services*, and NRC's Acquisition Regulation under 48 Code of Federal Regulations Chapter 20 provide specific requirements for NRC's contract administration process.

Contract administration involves those activities performed by agency officials after they award a contract. Contracting Officers (COs) administer NRC contracts. However, COs delegate specific contract administration responsibilities and technical supervision tasks to a Contracting Officer's Representative (COR). CORs are responsible for daily administration and technical direction of contracts during the period of performance. CORs review and reconcile invoices including verifying support for payment and collection. The COR is expected to maintain working contract files.

The audit objective was to assess the effectiveness of NRC's contract administration process and compliance with Federal and agency regulations.

OIG made recommendations to improve the effectiveness of management of contractor invoices and supporting documentation and to strengthen adherence to contract closeout procedures by CORs. Some recommendations addressed the effectiveness of internal controls over recordkeeping for contractor invoices and supporting documentation. Another recommendation addressed enhancement of internal controls to ensure better adherence to contract closeout procedures.

NRC Management stated their agreement with the findings and recommendations in this report.

The full report is available at: https://www.nrc.gov/docs/ML1722/ML17228A029.pdf

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