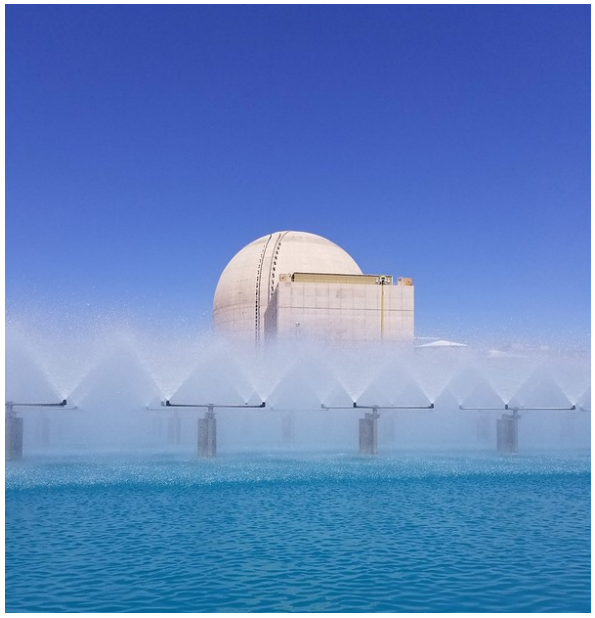
The Inspector General's Assessment of the Most Serious Management and Performance Challenges Facing the U.S. Nuclear Regulatory Commission in Fiscal Year 2025



Spray Pond, Palo Verde Nuclear Generating Station
Wintersburg, Arizona
(Source: nrc.gov)

At a Glance

WHY WE DID THIS REPORT

The Reports Consolidation Act of 2000 (Public Law 106-531) requires the Office of the Inspector General (OIG) to annually summarize what it considers to be the most serious management and performance challenges facing the U.S. Nuclear Regulatory Commission (NRC). The Act also requires the OIG to briefly assess the agency's progress in addressing those challenges.

WHAT WE FOUND

The OIG assessed the most serious challenges facing the NRC for Fiscal Year (FY) 2025. By addressing these challenges, the NRC will strengthen its mission execution, achieve its strategic goals, and maintain a high standard of accountability for its resources.

Informed by our independent and objective audits, evaluations, investigations, and other oversight activities, the OIG identified the following nine challenges:

1. Implementing applicable provisions of the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024 (ADVANCE Act);
2. Ensuring safety and security through risk-informed regulation of nuclear technologies and well-supported decisions regarding the restart of power plants in decommissioning;
3. Overseeing the decommissioning process and the management of decommissioning trust funds;
4. Ensuring the effective protection of information technology and data;
5. Recruiting and retaining a skilled workforce;
6. Overseeing the safe and secure use of nuclear materials and the storage and disposal of waste;
7. Enhancing financial efficiency and resource management;
8. Planning for and assessing the impact of artificial intelligence on nuclear safety and security programs; and,
9. Promoting ethical conduct within the agency and protecting regulatory integrity.

AGENCY RESPONSE TO MANAGEMENT AND PERFORMANCE CHALLENGES FOR FY 2025

Agency management reviewed and provided comments on the draft version of this report. The OIG has incorporated the agency's comments into this final report, as appropriate. The agency was in general agreement with the draft report.

Contents

Introduction

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FROM THE INSPECTOR GENERAL

I am pleased to present our assessment of the most significant management and performance challenges facing the NRC in Fiscal Year 2025.

The NRC accomplishes its mission by demonstrating through its work a dedication to ensuring public health and safety, promoting common defense and security, and protecting the environment through effective regulation of nuclear material. As a federal agency, the NRC must also be a responsible and effective steward of resources.

ABOUT THE OFFICE OF THE INSPECTOR GENERAL

In accordance with the 1988 amendments to the Inspector General Act of 1978, the NRC's OIG was established on April 15, 1989, as an independent and objective unit to conduct and supervise audits, evaluations, and investigations relating to the NRC's programs and operations. The purpose of the OIG's audits, evaluations, and investigations is to prevent and detect fraud, waste, abuse, and mismanagement, and to promote economy, efficiency, and effectiveness in the NRC's programs and operations. In addition, the OIG reviews existing and proposed regulations, legislation, and directives, and provides comments on any significant concerns.

The Inspector General serves under the general supervision of the NRC Chair but operates independently of the NRC regarding personnel, contracting, and budgeting authority. The Inspector General keeps the Chair and Congress informed of issues regarding NRC programs and operations, recommends corrective actions, and monitors the NRC's progress in implementing such actions.

ABOUT THE NRC

The NRC's mission is to license and regulate the nation's civilian use of radioactive materials in a manner that provides reasonable assurance of adequate protection of public health and safety, promotes the common defense and security, and protects the environment. The NRC's vision is to carry out this mission as a trusted, independent, transparent, and effective nuclear regulator, consistent with the NRC Principles of Good Regulation.

The NRC is headed by five Commissioners appointed by the President and confirmed by the Senate for five-year terms. The President designates one of the Commissioners as Chair, and the Chair serves as the official spokesperson for the Commission. On January 20, 2021, President Biden designated Christopher T. Hanson as Chair of the Commission. Chair Hanson is joined by Commissioner David A. Wright, Commissioner Annie Caputo, and Commissioner Bradley R. Crowell. The vacant seat at the Commission awaits Senate confirmation. The Commission formulates policies and approves regulations governing nuclear reactor and materials safety, issues certain orders to NRC-regulated entities, and adjudicates certain legal matters concerning the NRC.

NRC Headquarters
(Source: nrc.gov)

The Executive Director for Operations (EDO) carries out the policies and decisions of the Commission and directs the activities of the NRC's program offices. The offices reporting to the EDO strive to ensure the safe use of nuclear materials for commercial, medical, industrial, and research applications in the United States. As part of the regulatory process, the NRC's four regional offices conduct inspection, enforcement, and emergency response programs for licensees within their regions or areas of responsibility.

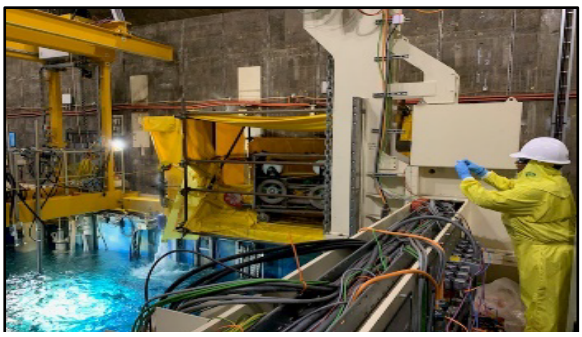
The NRC's FY 2022–2026 Strategic Plan describes the agency's mission, vision, and principles of good regulation, along with its strategic goals, objectives, and strategies. The strategic goals of continuing to foster a healthy organization and inspiring stakeholder confidence in the NRC complement the safety and security strategic goal. The safety and security strategic goal helps ensure the safe and secure use of radioactive materials.

In situ Uranium Recovery Mining,
Crow Butte, Nebraska
(Source: Courtesy of Cameco Corp.)

The NRC carries out its safety and security activities through two major programs: Nuclear Reactor Safety, consisting of the Operating Reactors and New Reactors business lines, and Nuclear Materials and Waste Safety, consisting of the Fuel Facilities, Nuclear Materials Users, Decommissioning and Low-Level Waste, Spent Fuel Storage, and High-Level Waste business lines. The agency accomplishes its mission to provide reasonable assurance of adequate protection for public health and safety through regulatory activities such as licensing, oversight, and rulemaking.

In addition, the NRC's incident response activities prepare for and respond to emergencies involving radioactive materials.

The NRC's FY 2025 budget request is $994.9 million, including 2,897.9 full-time equivalents (FTEs). This request represents an increase from the FY 2024 budget request, primarily to support increased salaries and benefits.



NRC inspector observes decommissioning activity at San Onofre Nuclear Generating Station, San Clemente, California (Source: nrc.gov)

CLOSURE OF OIG AUDIT RECOMMENDATIONS

The NRC implemented and closed[1] 43 OIG audit recommendations during FY 2024. Some of the corrective actions completed by the NRC during FY 2024 also resulted in closure of the following eight associated audit reports:

- *Independent Evaluation of the NRC's Potential Compromise of Systems (Social Engineering) (20-A-09)*
- *Audit of the NRC's Property Management Program (20-A-17)*
- *Audit of the NRC's Oversight of the Adequacy of Decommissioning Trust Funds (21-A-14)*
- *Audit of the U.S. Nuclear Regulatory Commission's Oversight of Counterfeit, Fraudulent, and Suspect Items at Nuclear Power Reactors (22-A-06)*
- *Audit of the U.S. Nuclear Regulatory Commission's Vacancy Announcement Process (23-A-03)*
- *Audit of the U.S. Nuclear Regulatory Commission's Oversight of the Federally Funded Research and Development Center Contract (23-A-08)*
- *Audit of the U.S. Nuclear Regulatory Commission's Voluntary Leave Transfer Program (23-A-09)*
- *Audit of the U.S. Nuclear Regulatory Commission's Implementation of the Federal Information Security Modernization Act of 2014 for Fiscal Year 2023 Region II: Atlanta, Georgia (24-A-04)*

During FY 2024, the NRC made significant progress in achieving its safety and security goals through its continued oversight of the operation of nuclear power plants and fuel cycle facilities, and the regulation of the use of nuclear materials in nuclear medicine, through licensing, inspection, and enforcement of its requirements. The NRC staff's

[1] An OIG recommendation is closed when the NRC provides an acceptable course of action that will fulfill the intent of the recommendation and documents its completion of the necessary work.

accomplishments enable the agency to meet its goal of becoming a modern, risk-informed regulator. This report on the NRC's management and performance challenges summarizes and highlights the critical areas that demand the agency's attention. The OIG remains committed to thorough and timely oversight of the agency's programs and operations and looks forward to continuing to work with the agency to make progress in these important challenge areas in FY 2025.

NRC FY 2025 MANAGEMENT AND PERFORMANCE CHALLENGES

The OIG identified the NRC's most serious challenges for FY 2025, noting actions already completed by the agency and the NRC's continued work on each challenge. The challenges are not listed in order of priority, nor do they necessarily indicate problems within the agency; rather, they should be considered as areas of focus for the NRC's management and staff.

The NRCs' leadership provided its own assessment of the key challenges facing the agency in its response to the OIG's request for input in these areas. We considered their input and independently identified the following nine clear, specific, and actionable challenges that require the NRC's continued attention:

1. Implementing applicable provisions of the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024 (ADVANCE Act);
2. Ensuring safety and security through risk-informed regulation of nuclear technologies and well-supported decisions regarding the restart of power plants in decommissioning;
3. Overseeing the decommissioning process and the management of decommissioning trust funds;
4. Ensuring the effective protection of information technology and data;
5. Recruiting and retaining a skilled workforce;
6. Overseeing the safe and secure use of nuclear materials and storage and disposal of waste;
7. Enhancing financial efficiency and resource management;
8. Planning for and assessing the impact of artificial intelligence on nuclear safety and security programs; and,
9. Promoting ethical conduct within the agency and protecting regulatory integrity.

By addressing these challenges, the NRC will strengthen its mission execution, achieve its strategic goals, and maintain a high standard of accountability for its resources.

Challenge 1: Implementing Applicable Provisions of the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024 (ADVANCE Act)

WHY IS THIS A SERIOUS MANAGEMENT AND PERFORMANCE CHALLENGE?

The Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024 (ADVANCE Act) was signed into law on July 9, 2024, and aims to bolster the future of nuclear energy in the United States through strategic initiatives. The ADVANCE Act focuses on streamlining the NRC's regulatory processes; supporting, developing, and deploying advanced nuclear technologies; and, enhancing the United States' nuclear energy leadership. Several provisions of the ADVANCE Act have near-term implementation deadlines for the NRC, necessitating extensive coordination across the agency for effective execution.

CHALLENGE SYNOPSIS

The ADVANCE Act focuses on streamlining the NRC's regulatory processes, supporting the development and deployment of advanced nuclear technologies, and enhancing U.S. nuclear energy leadership on a global scale.

The ADVANCE Act provides a foundation for the NRC's strategic realignment, directing changes to the NRC's programs, processes, and procedures. The goal of the legislation is to modernize the regulatory framework to align with technological advancements. Key directives from the ADVANCE Act require the NRC to:

- Augment its mission statement to specify that its licensing and regulation of radioactive materials and nuclear energy will be conducted in a manner that is efficient and does not unnecessarily limit "the potential of nuclear energy to improve the general welfare" and "the benefits of nuclear energy technology to society";
- Develop guidance to support efficient, timely, and predictable reviews of applications for advanced reactor licenses;
- Implement strategies related to the regulation of micro-reactors;
- Implement strategies related to nuclear facilities at brownfield sites;

- Establish an expedited procedure for qualifying Combined License applications; and,
- Update performance metrics and milestone schedules and report to Congress if a final safety evaluation of a requested activity is delayed by 90 days.

To facilitate these changes, the ADVANCE Act will enhance the NRC's resources by increasing the limits on corporate support costs; excluding activities from the fee recovery requirement for advanced reactor applicants and pre-applicants; and, authorizing additional special compensation authority to the NRC, including direct hire authority and increased pay for certain positions.

Ongoing Actions

The NRC's implementation planning is underway. The Office of the Executive Director for Operations (OEDO) is coordinating the implementation of the ADVANCE Act's provisions and will develop reports that the Act requires the NRC to submit to Congress.

Completed Actions

The OEDO has designated a dedicated Core Team with a Lead (Special Assistant to the EDO) to coordinate the agency-wide efforts for implementation of the requirements in the ADVANCE Act.

The NRC has also established a public website to inform and engage external stakeholders during implementation of the ADVANCE Act.

Challenge 2: Ensuring Safety and Security Through Risk-Informed Regulation of Nuclear Technologies and Well-Supported Decisions Regarding the Restart of Power Plants in Decommissioning

WHY IS THIS A SERIOUS MANAGEMENT AND PERFORMANCE CHALLENGE?

As the NRC continues to transform into a modern, risk-informed regulator, the agency must continue to ensure safety and security through risk-informed regulation of existing nuclear power plants and new nuclear technologies as well as by making well-supported decisions regarding the restart of power plants in decommissioning. Specifically, the agency must: (1) Ensure risk-informed regulation is consistently applied to its licensing and oversight processes; (2) License and regulate nuclear power plants for established and new reactor technologies in a timely manner; (3) Make well-supported decisions regarding the reauthorization of operating licenses for power plants in decommissioning; and, (4) Maintain robust and adaptive oversight programs to ensure nuclear power licensees can protect their facilities effectively against evolving threats.

CHALLENGE SYNOPSIS

Ensuring Risk-Informed Regulation Is Consistently Applied through Regulatory Activities

To become a modern, risk-informed regulator, the NRC focused on several transformational areas such as applying risk in decision-making and adopting new technologies and approaches to data analytics. For example, the BeRiskSMART framework is a systematic approach that supports the NRC in applying and communicating risk insights for various technical, corporate, or legal decisions.

Readiness to License and Regulate Established and New Reactor Technologies and Reauthorize Power Plants in a Timely Manner

With advancements in new reactor technologies, especially advanced light water and non-light water small modular reactors (SMRs), the NRC faces several challenges, including that (1) the regulatory review of SMR designs must consider the interrelated design features and the overall safety profile holistically; and, (2) licensing SMRs can face lengthy review periods, require agencies to address regulatory capability gaps, and

involve significant fees charged by regulators. These challenges can affect a project's timeline, cost, and overall economics. The NRC must be ready to license and regulate the SMRs, and also manage the workload related to the existing nuclear power reactor fleet, which involves initial and subsequent license renewal and other licensing reviews and oversight activities.

Further, domestic utilities are developing technologies that can extend the operating lifetimes of existing reactors, and Congress has passed legislation to facilitate research, development, and licensing of new reactor technologies. These initiatives' technical complexity and cutting-edge nature have challenged the NRC to adapt its regulatory processes to accommodate technologies that cannot be readily assessed using existing approaches. For example, the NRC received a first-of-its-kind licensing request to reauthorize power operations at a plant that was in the decommissioning process. However, at the time of the request, the NRC did not have a prescribed regulatory pathway to reauthorize power operations. The NRC developed requirements for inspections to ensure plant operational readiness and to provide reasonable assurance for safe operations following the reauthorization of the operating license. The NRC also developed oversight policies, requirements, and guidance for transitioning from a decommissioning reactor facility to an operational power reactor facility. Although these processes have been developed, the NRC still needs to determine if their implementation is sufficient.

Maintaining Robust and Adaptive Oversight Programs to Ensure Nuclear Power Licensees Can Protect Their Facilities Against Evolving Threats

The U.S. Government categorizes critical infrastructure into 16 sectors. The sectors include assets, systems, and networks vital to the security, economy, and public health and safety of the United States. The U.S. Department of Homeland Security's Cybersecurity and Infrastructure Security Agency is the Sector Risk Management Agency for the Nuclear Reactors, Materials, and Waste Sector. The NRC regulates activities in this sector in accordance with its statutory mission to ensure adequate protection of public health and safety, promote common defense and security, and protect the environment.

Nuclear power plants must successfully defend against a set of hypothetical threats that the NRC refers to as the design-basis threat. These hypothetical threats challenge a plant's physical, personnel, and cyber security. Therefore, the NRC must ensure its security oversight programs are robust and adaptive to such evolving threats.

Ongoing Actions

The NRC continues to invest in Future-Focused Research. This Strategic Research Partnership initiative employs transformational principles by preparing the NRC for regulatory success with new and emerging technologies.

The NRC is focused on improving NRC guidance and processes, such as those related to the use of risk in evaluating licensing requests. Additionally, the NRC continues to enhance tools to support licensing activities, workload management, and data-driven decision-making, such as through the continued expansion of Mission Analytics Portal-External tools to facilitate online information collection from applicants and licensees.

Completed Actions

The NRC has established a Restart Panel to review, inspect, and confirm that the Palisades power plant is ready to be returned to an operating facility. The primary objective of the Restart Panel is to proactively identify and promptly resolve any licensing, inspection, or regulatory challenges that concern the restart of the power plant.

Challenge 3: Overseeing the Decommissioning Process and the Management of Decommissioning Trust Funds

WHY IS THIS A SERIOUS MANAGEMENT AND PERFORMANCE CHALLENGE?

The increased number of power reactor sites in decommissioning, including those opting for accelerated decommissioning, adds to demands on program resources for all decommissioning licensing and oversight activities, including the NRC's independent analyses of licensees' decommissioning funding status reports.

CHALLENGE SYNOPSIS

Oversight of the Decommissioning Process

As of August 2024, the NRC is overseeing the decommissioning of 21 power reactors. The NRC regulates the decommissioning of nuclear facilities by reviewing decommissioning plans, conducting inspections, and monitoring the status of activities to ensure that radioactive contamination is reduced or stabilized. This monitoring system helps ensure that safety requirements are being met throughout the process. Decommissioning must be completed within 60 years of a plant ceasing operations.

Management of Decommissioning Trust Funds

Before a nuclear power plant begins operations, the licensee must establish a financial mechanism—such as a trust fund—to ensure there will be sufficient funds to pay for the eventual decommissioning of the facility. The NRC requires licensees to provide a decommissioning financial status report biennially for nuclear reactors still in operation and annually for five years for sites in decommissioning, prior to permanent cessation of operations. Prior to, or within two years after the permanent cessation of operations, licensees must submit a Post Shut-Down Decommissioning Activities Report with a description and schedule for the planned decommissioning activities and a site-specific cost estimate. Licensees managing the decommissioning phase must then annually submit decommissioning funding status reports to the agency.

The OIG Risk Assessment report issued in July 2024[2] noted that in February 2024 alone, the NRC identified issues related to the misuse of decommissioning trust funds at four separate sites. Even though NRC inspection procedures did not require inspectors to conduct detailed reviews of licensee expenditures, the inspectors at these four sites, who were not financial experts or auditors, identified these apparent instances of misuse. The report highlighted the need for greater transparency over the approximately $79 billion in decommissioning trust funds.

ONGOING ACTIONS

The NRC is performing licensing reviews and oversight for 21 power reactors in various stages of decommissioning. The NRC staff periodically inspect operations at the licensees' sites to ensure that decommissioning activities are being conducted in accordance with applicable NRC regulations and license commitments.

The NRC is currently going through rulemaking to clarify when an exemption is necessary for the use of decommissioning trust funds. The rulemaking's estimated completion date is in Quarter 1 of FY 2025. A Regulatory Guide, RG 1.184, is planned to follow the rulemaking to provide further guidance for NRC staff and licensees.

The NRC also expects to issue the final rule on *Regulatory Improvements for Production and Utilization Facilities Transitioning to Decommissioning*, which will incorporate lessons learned from nuclear power plants that have recently transitioned to decontamination and decommissioning. The NRC expects this rule to improve the effectiveness and efficiency of the regulatory framework.

COMPLETED ACTIONS

The NRC supported licensing and oversight for decommissioning programs with guidance updates and generic communications to the nuclear industry. Among these issuances was an Information Notice, issued in FY2023, to make the industry aware of the recent increase in fire protection issues at decommissioning reactor facilities and the importance of a robust fire protection program to prevent the release of radioactive material that could be released as a result of fires involving contaminated plant equipment or waste.

[2] Office of the Inspector General's Risk Assessment of the U.S. Nuclear Regulatory Commission's Decommissioning Trust Fund Oversight and Related Activities (OIG-24-RA-01), issued July 1, 2024.

Challenge 4: Ensuring the Effective Protection of Information Technology and Data

WHY IS THIS A SERIOUS MANAGEMENT AND PERFORMANCE CHALLENGE?

The NRC's information technology (IT) security and operations continue to be a focus of attention for the agency. While the NRC has made significant progress toward improving and modernizing its technology environment and organizational structure, challenges remain. The NRC is challenged to support a future-ready workforce equipped with modern tools, technology, skills, and knowledge that will meet its current and future mission needs.

CHALLENGE SYNOPSIS

The NRC must continue to meet federal statutory and regulatory mandates for Information Technology and Information Management (IT/IM) while remaining within its statutory budget limitations for corporate support. The NRC's IT/IM program is responsible for maintaining and enhancing IT/IM services and its infrastructure to accomplish the agency's mission. The NRC also faces numerous challenges, from cyber threats to data security, relating to its oversight of nuclear facilities and nuclear materials users, including challenges in areas such as emergency preparedness and incident response.

In addition, the NRC has enhanced its cybersecurity posture in the wake of evolving threats and new federal mandates by automating compliance activities, developing an Information Security Architecture, and migrating Federal Information Security Modernization Act of 2014 (FISMA) systems to a more streamlined environment. As part of a continued effort to modernize IT, the agency is working to better manage acquisitions by using best practices and improving the customer experience.

The NRC's key IT/IM and security oversight challenges include:

- Managing ongoing supply chain risks posed to IT and operational infrastructure;
- Promoting enterprise solutions to manage risk-based security strategies and protect against increasing numbers, types, and sophistication of cyber threats;
- Managing rigorous patching to meet compliance targets in the face of evolving threats and vulnerabilities;

- Aligning agency-wide information resource planning to achieve benefits and flexibilities, with a focus on recruiting and retaining an experienced and professional IT workforce;
- Protecting intellectual property associated with new technologies under development and licensing review;
- Executing the insider threat prevention and detection program to protect classified and safeguards information; and,
- Executing actions required by FISMA to strengthen information technology security.

Ongoing Actions

The NRC continues to address FISMA recommendations resulting from the OIG's audits.

Completed Actions

In FY 2024, the NRC implemented a process to ensure new contractors complete security training prior to receiving access to NRC systems.

In FY 2024, the NRC conducted a training session during the Information Systems Security Manager Forum to address the requirements of CSO-PROS-2030, "Risk Management Framework Process," and CSO-PROS-1323, "Continuous Monitoring Process."

In FY 2024, the NRC completed transitioning all of its FISMA system security plans to follow National Institute of Standards and Technology Special Publication 800-53, Revision 5, "Security and Privacy Controls for Information Systems and Organizations," issued September 2020.

In FY 2024, the NRC completed implementation of a centralized and automated application, the Risk and Continuous Authorization Tracking System, that aggregates cybersecurity plans of action and milestone risks for all FISMA systems, including the agency's programmatic cybersecurity risks.

Challenge 5: Recruiting and Retaining a Skilled Workforce

WHY IS THIS A SERIOUS MANAGEMENT AND PERFORMANCE CHALLENGE?

Increased interest in nuclear power places higher demands on NRC staff to support pre-licensing, licensing, and inspection activities for new and existing technologies during a period when one-third of the agency's staff has reached retirement age.

CHALLENGE SYNOPSIS

Renewed commercial interest in nuclear power—particularly regarding advanced and small modular reactor designs—has increased the NRC's pre-licensing workload involving prospective reactor licensees, as well as the agency's rulemaking activities focusing on advanced reactor technologies. The NRC seeks to hire the best candidates to join its talented workforce by offering rewarding careers at an innovative organization. One of the NRC's top strategic goals is supporting a skilled workforce that is fully equipped to advance agency objectives.

Nevertheless, like many federal agencies, the NRC faces challenges in recruiting and retaining highly skilled staff to address projected attrition and prepare for an anticipated increasing workload in future years. Recruitment and retention are critical because one-third of the NRC's staff is retirement-eligible. This is especially important because the NRC's FY 2024 budget request included $105 million for the regulation of new reactors. The work for new reactors includes the development of a new regulatory licensing framework, numerous pre-application activities, and technical reviews associated with several licensing activities. The increased workload will require additional hires. The NRC should strive to use its status as an excepted service agency to increase the timeliness of filling vacancies. Excepted service agencies set their own qualification requirements and are not subject to the appointment, pay, and classification rules in Title 5, United States Code, *Government Organization and Employees*.

Ongoing Actions

An evaluation of the NRC's Strategic Workforce Planning Process was finalized in April 2024. The agency is developing plans for the implementation of recommendations from the evaluation, which will support enhancement of the process guidance and development of a new software application to the agency's execution of the process.

The NRC created the Agency Culture Team to aid the NRC in incorporating specific desired values and behaviors into NRC processes, practices, and initiatives. The team aims to improve the NRC's Federal Employee Viewpoint Survey results and the NRC's ranking in the *Best Places to Work in the Federal Government*, and to lower the agency's attrition rate.

Completed Actions

As of July 2024, the NRC had filled 212 vacancies in FY 2024 with external hires.

The Office of the Chief Human Capital Officer updated the *Standard Operating Procedure (SOP) for Direct Hire Authority (DHA) 2024* on June 12, 2024, to provide additional clarity and detail on the Direct Hire Authority process and administration.

Challenge 6: Overseeing the Safe and Secure Use of Nuclear Materials and the Storage and Disposal of Waste

WHY IS THIS A SERIOUS MANAGEMENT AND PERFORMANCE CHALLENGE?

The NRC is responsible for effectively overseeing the use of nuclear materials and the storage and disposal of nuclear waste. The NRC must coordinate with the 39 Agreement States to ensure a consistent understanding and implementation of regulations controlling radioactive materials.

CHALLENGE SYNOPSIS

The Nuclear Materials and Waste Safety Program is charged with licensing and overseeing the use of nuclear materials in a manner that adequately protects public health and safety. This program is expected to provide assurance of the physical security of materials and waste, as well as protection against radiological sabotage, theft, or diversion. Through this program, the NRC regulates uranium processing and fuel facilities, research and pilot facilities, nuclear materials users (medical, industrial, research, and academic), spent fuel storage, decontamination and decommissioning of facilities, and low-level and high-level radioactive waste. The NRC has sole responsibility for overseeing activities involving high-level radioactive waste, the highly radioactive byproduct of the reactions that occur inside nuclear reactors. Spent reactor fuel is one form of high-level radioactive waste.

Overseeing the safety and security of nuclear materials and waste also entails coordination and consultation with other governmental entities, including federal agencies, tribal governments, and state governments. The NRC's regulatory framework includes Agreement States, which are U.S. states that have entered into agreements with the NRC to regulate certain radioactive materials. Combined, the NRC and the Agreement States constitute the National Materials Program. Agreement States must demonstrate that their regulatory programs are adequate to protect public health, safety, and the environment, and are compatible with the NRC's program. There are currently 39 Agreement States. Additionally, Connecticut, Indiana, and West Virginia have submitted letters of intent to become Agreement States.

Ongoing Actions

The NRC continuously reviews new applications, amendments, renewals, and terminations. The agency also conducts routine health, safety, and security inspections, as well as reciprocity and reactive inspections.

The Commission is reviewing SECY-22-0112, "Proposed Rule: Radioactive Source Security and Accountability," which is expected to address source security concerns.

Completed Actions

In FY 2024, the NRC's enforcement program issued over 40 severity level III notices of violations to materials licensees.

Challenge 7: Enhancing Financial Efficiency and Resource Management

WHY IS THIS A SERIOUS MANAGEMENT AND PERFORMANCE CHALLENGE?

The NRC must enhance its financial efficiency to gain insights into costs and financial performance, enabling more informed and effective resource management. Additionally, the NRC must continue to ensure that its contracts and grants are administered in accordance with applicable laws and regulations.

CHALLENGE SYNOPSIS

The NRC must seek opportunities to improve its budget formulation process and manage the carryover funding that has resulted from unspent appropriations. More effective use of financial data would enhance decision-making and enable resource optimization or realignment. In addition, the ADVANCE Act will cap the NRC's corporate support costs at 30 percent of the agency's total budget authority, allowing for certain exceptions for FYs 2025 and forward. The NRC must adhere to this limit while meeting its operational needs and strategic goals.

The Nuclear Energy Innovation and Modernization Act (Public Law 115-439) (NEIMA) requires the NRC to recover, to the maximum extent practicable, approximately 100 percent of its annual budget, with exceptions for certain amounts excluded from the fee recovery requirement. The NRC has enhanced the fee-setting process by establishing and achieving performance measures for transparency and timeliness; however, it should also prioritize fee stability. Significant increases in budgeted costs, changes in the fee methodology, or the application of carryover funding impact the predictability of fees and pose budgeting challenges for licensees.

Ongoing Actions

The Fee Billing Engine project will allow the NRC to recover the costs of providing individually identifiable services to specific applicants and licensees more efficiently and effectively. The launch of the Fee Billing Engine is anticipated in FY 2027.

Completed Actions

The NRC retained an independent public accounting firm that reviewed the agency's FY 2023 financial statements and concluded the NRC maintained effective internal control over financial reporting.

An independent audit concluded that for FY 2023 the NRC complied with the requirements of the Payment Integrity Information Act of 2019.

The NRC has implemented a paperless payment initiative to comply with a U.S. Department of the Treasury mandate. This initiative was incorporated into the FY 2024 Proposed Fee Rule and will transition the NRC to electronic collection methods beginning in October 2024. Adopting the available electronic payment options will enhance processing speed and accuracy.

Challenge 8: Planning for and Assessing the Impact of Artificial Intelligence on Nuclear Safety and Security Programs

WHY IS THIS A SERIOUS MANAGEMENT AND PERFORMANCE CHALLENGE?

As a modern, risk-informed regulator, the NRC must develop procedures and strengthen the workforce's knowledge to assess the use of artificial intelligence (AI) on NRC programs. Additionally, like all federal agencies, the NRC is expected to increase its capacity to responsibly adopt AI.

CHALLENGE SYNOPSIS

AI is one of the fastest-growing global technologies. By providing insights into the vast amounts of data generated during the design and operation of nuclear facilities, AI has the potential to enhance decision-making processes for the nuclear industry. The NRC must develop an AI framework that supports timely review of licensee uses of AI in regulated activities. The NRC's AI framework also needs to support identification, development, and implementation of AI uses that enhance delivery of the agency mission through improvements in operational efficiency, productivity, and decision-making, while considering the policies stated in Executive Orders 13859, "Maintaining American Leadership in Artificial Intelligence," 13960, "Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government," and 14110, "Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence." Central to both components of the AI framework, the NRC must cultivate an AI-proficient workforce, keep pace with AI technological innovations, and help ensure the safe and secure use of AI in NRC-regulated activities.

The NRC's AI Strategic Plan, covering FYs 2023–2027, along with the NRC Information Technology Roadmap, establishes the vision and goals for the NRC in this area. The AI Strategic Plan includes five goals: (1) ensure the NRC's readiness for regulatory decision-making; (2) establish an organizational framework to review AI applications; (3) strengthen and expand AI partnerships; (4) cultivate an AI-proficient workforce; and, (5) pursue use cases to build an AI foundation across the NRC.

Ongoing Actions

An October 2023 tasking from Chair Hanson resulted in the development of an AI working group with representatives from the Office of the Chief Information Officer , the Office of the General Counsel, and the Office of Nuclear Regulatory Research.

The working group was tasked to develop and implement an action plan to address how AI can be used internally to improve the NRC's licensing and oversight processes; how AI can be used to automate simple or repetitive tasks, reduce human error, save resources, process large datasets, make better data-driven decisions, and reduce regulatory review time; and, how AI applications could help with knowledge management, strategic workforce planning, and hiring initiatives to build and prepare the workforce of the future.

The NRC staff has initiated work on an enterprise-wide AI strategy to meet the requirements of Office of Management and Budget (OMB) Memorandum M-24-10, *Advancing Governance, Innovation, and Risk Management for Agency Use of Artificial Intelligence.* The enterprise-wide AI strategy will reflect the NRC's two AI strategic objectives (i.e., timely review of licensee uses of AI in regulated activities and NRC staff use of AI to enhance delivery of the NRC mission).

Completed Actions

In September 2024, the NRC published an AI principles paper with Canada and the United Kingdom outlining guiding principles for the safe and secure use of AI in nuclear applications.

In March 2024, in keeping with OMB Memorandum M-24-10, the NRC designated an agency Chief AI Officer and convened an agency AI Governance Board.

As of April 2024, the AI Team had identified 36 potential AI use cases that would enhance staff productivity and support the workforce. One potential use area involves applying AI to automate routine tasks and implement workflow and process improvements, making many of the staff's daily tasks more efficient.

Challenge 9: Promoting Ethical Conduct Within the Agency and Protecting Regulatory Integrity

WHY IS THIS A SERIOUS MANAGEMENT AND PERFORMANCE CHALLENGE?

The NRC must administer its programs impartially and base its decisions on sound analyses that are free of inappropriate influence or the appearance thereof. Adhering to ethical principles helps ensure the public's trust in the agency and its decisions.

CHALLENGE SYNOPSIS

Ethical conduct and regulatory integrity are the bedrock of the NRC's mission, and strengthening this foundation is a key to effective agency management. The public has entrusted the NRC with regulating the commercial use of nuclear material and administering the agency's programs impartially. Maintaining an ethical work culture and adhering to ethics requirements preserves the agency's integrity and enhances public trust in the NRC.

The NRC has demonstrated the strength of its ethics program through its training efforts and financial disclosure report reviews, as well as through its enforcement of ethics rules. For example, in recent years NRC ethics officials identified several ethics violations involving a senior agency official, and the agency's responsive actions led to the violations being resolved. On the other hand, there are opportunities to strengthen the NRC's compliance with ethics rules. As an example, in FY 2024 the OIG's Investigations Division found that the agency lacked sufficient policies and internal controls for its Advisory Committee on the Medical Uses of Isotopes to ensure committee members avoided both actual and apparent conflicts of interest.

With the planned increase in hiring of personnel and program funding under the ADVANCE Act, the NRC will need to ensure that it has a robust ethics program that educates employees about their ethics obligations, identifies and monitors potential ethics issues, and promptly reports potential violations to the OIG. The NRC must also hold employees accountable when it finds violations of ethics rules.

Ongoing Actions

The NRC continues to conduct annual ethics training and monitor compliance with both the government-wide standards of ethical conduct and the NRC's supplemental ethics rules.

The NRC plans to revise *Serving on the Advisory Committee on the Medical Uses of Isotopes (ACMUI): A Member's Guide* (NUREG/BR-0309), to provide additional detail on members' responsibilities involving conflicts of interest and the appearance of such conflicts.

Completed Actions

The NRC recently updated its hiring process for ACMUI members to include candidate interview questions related to ethics and conflict-of-interest responsibilities.

The NRC also updated its Senior Executive Service and Senior Level employee welcome letters to emphasize the importance of supervisors complying with ethics responsibilities and provide incoming senior Government employees with updated contact information for agency ethics officials. Additionally, the NRC updated its annual ethics training for filers of public financial disclosure reports to emphasize supervisors' ethics responsibilities.

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COMMENTS AND SUGGESTIONS

If you wish to provide comments on this report, please email the OIG using this link.
In addition, if you have suggestions for future OIG audits, please provide them using this link.

NOTICE TO NON-GOVERNMENTAL ORGANIZATIONS AND BUSINESS ENTITIES SPECIFICALLY MENTIONED IN THIS REPORT

Section 5274 of the James M. Inhofe National Defense Authorization Act for Fiscal Year 2023, Pub. L. No. 117-263, amended the Inspector General Act of 1978 to require OIGs to notify certain entities of OIG reports. In particular, section 5274 requires that, if an OIG specifically identifies any non-governmental organization (NGO) or business entity (BE) in an audit or other non-investigative report, the OIG must notify the NGO or BE that it has 30 days from the date of the report's publication to review the report and, if it chooses, submit a written response that clarifies or provides additional context for each instance within the report in which the NGO or BE is specifically identified.

If you are an NGO or BE that has been specifically identified in this report and you believe you have not been otherwise notified of the report's availability, please be aware that under section 5274 such an NGO or BE may provide a written response to this report no later than 30 days from the report's publication date. Any response you provide will be appended to the published report as it appears on our public website, assuming your response is within the scope of section 5274. Please note, however, that the OIG may decline to append to the report any response, or portion of a response, that goes beyond the scope of the response provided for by section 5274. Additionally, the OIG will review each response to determine whether it should be redacted in accordance with applicable laws, rules, and policies before we post the response to our public website. Please send any response via email using this link. Questions regarding the opportunity to respond should also be directed to this same address.