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The Inspector General's Assessment of the Most Serious Management and Performance Challenges Facing the U.S. Nuclear Regulatory Commission in Fiscal Year 2027



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From the Inspector General



On behalf of the Office of the Inspector General (OIG) for the U.S. Nuclear Regulatory Commission (NRC) and Defense Nuclear Facilities Safety Board (DNFSB), it is my pleasure to present our assessment of the most serious management and performance challenges facing the NRC in Fiscal Year 2027. The OIG presents this assessment consistent with the Reports Consolidation Act of 2000 (Public Law 106-531), which requires each OIG to annually summarize the challenges facing the agencies it oversees and briefly assess each agency's progress in addressing those challenges.

The challenges set forth below 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. NRC leaders provided their own assessments of the key challenges facing the agency in responding to the OIG's request for input in these areas. We considered their input and independently identified the following five clear, specific, and actionable challenges that require the NRC's continued attention:

1. Reforming and Modernizing Nuclear Regulation While Maintaining Safety and Security;
2. Modernizing Regulatory Frameworks for the Safe Deployment of Advanced Reactors and Advanced Fuels;
3. Managing and Addressing Evolving Human Capital Demands;
4. Ensuring an Effective Information Security Program and Managing the Impact of Super Intelligence; and,
5. Managing Financial Resources and Enhancing Accountability.

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

The OIG has included in this report summaries of some of the work the NRC has accomplished or plans to complete during Fiscal Year 2027 for each NRC challenge.

Robert J. Feitel

Inspector General

Challenge #1: Reforming and Modernizing Nuclear Regulation While Maintaining Safety and Security

In 2025, President Donald J. Trump issued several executive orders (EO) to modernize federal oversight of the production and uses of nuclear energy. Among these orders, EO 14300, *Ordering the Reform of the Nuclear Regulatory Commission*, instructed the NRC to simplify licensing, update regulations, and remove unnecessary barriers to the introduction of new nuclear technologies. The EO builds on reforms enacted in the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy (ADVANCE) Act of 2024, which directed the NRC to improve the efficiency, timeliness, and predictability of licensing reviews and facilitate the safe deployment of new nuclear technologies.

EO 14300 addresses both advanced and existing technologies. While its primary focus is on accelerating the licensing and deployment of new reactor technologies, the order also directs the NRC to support the continued operation of the current nuclear fleet and reduce unnecessary regulatory burdens for existing nuclear facilities. Additionally, it requires the NRC to reduce unnecessary regulatory burdens and licensing costs related to areas such as security, storage, and the use of special nuclear material.

As the NRC continues its transformation into a modern, risk-informed regulator, the agency must continue to ensure the safety and security of existing and new nuclear facilities. Specifically, the agency must: (1) ensure risk-informed regulation is consistently applied to its licensing and oversight processes; (2) reach licensing decisions on established and new reactor technologies in a timely manner; (3) make well-supported decisions regarding the restart of 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.

Ongoing and Completed Actions:

- In September 2025, the NRC published a direct final rule extending the duration of standard design certifications from 15 to 40 years. This rule allows a much longer period for applicants to reference a certified design in their applications, expediting the licensing process. Previously, applicants and the NRC had to cycle through the renewal processes every 15 years. The NRC determined that extending the renewal process to 40 years would reduce unnecessary regulatory burdens on applicants and save the industry and the NRC's resources without compromising safety or security. The NRC

estimated that the rule will result in cost savings of over $55 million over a 65-year analysis period.

- In March 2026, the NRC finalized a new regulatory pathway codified in Title 10 of the Code of Federal Regulations (C.F.R.) Part 53. The rules in Part 53 allow advanced reactor developers to bypass prescriptive rules designed for large light-water reactor designs and instead allow the developers to use streamlined, flexible, siting and construction options. Part 53 is designed to be risk-informed and technology-inclusive, with the goal of offering a faster and more flexible pathway for research and test reactors (RTRs), advanced reactors, and microreactors.

- In March 2026, the NRC approved a major update to the Reactor Oversight Process (ROP) that, as stated by the agency, results in a more risk-focused process that significantly reduces routine inspection hours for U.S. nuclear power plants.

- The NRC has significantly ramped up its commercial reactor license renewals to support long-term grid stability and clean energy goals. 18 nuclear reactors had their operating licenses successfully renewed by the NRC over a 15-month period ending in June 2026. Nearly 17,000 megawatts (MW) of generating capacity was secured through these extensions. Subsequent License Renewals (SLRs) are increasingly pushing the operational lifespans of these plants out to 80 years, providing power to the electrical grid as demand rises.

- In July 2026, the NRC proposed revisions to its radiation protection standards, aiming to replace the "as low as is reasonably achievable" (ALARA) principle with a graded approach to managing radiation doses below regulatory limits.[1] The proposed regulations were published for public comment on July 15, 2026, with a final rule expected to be published in early 2027.

[1] ALARA is a standard that requires workers and facilities to keep radiation doses as far below applicable exposure limits as is reasonably achievable.

Challenge #2: Modernizing Regulatory Frameworks for the Safe Deployment of Advanced Reactors and Advanced Fuels

Based on technological developments, statutory changes, and Presidential policy, the NRC must adapt its reactor licensing regulations, which were originally created for large reactors, to more efficiently accommodate advanced reactors like small modular reactors (SMRs) and microreactors.[2] Key challenges for the NRC include addressing licensing issues, safety and security concerns, and operational and deployment difficulties. The NRC uses several strategic and technological approaches, such as the development of modern, risk-informed regulatory frameworks, to enable the safe deployment of advanced reactors.

Section 505 of the ADVANCE Act directs the NRC to provide efficient, timely, and predictable application reviews. Section 208 requires risk-informed, performance-based strategies for microreactor licensing and regulation. Delays in reviewing new or advanced reactors could postpone advanced technology deployment, raising concerns about the NRC's readiness for future reviews. The NRC must show it can license and regulate advanced reactors effectively while also handling regulatory actions for the current nuclear fleet.

In March 2026, the NRC finalized 10 C.F.R. Part 53, which provides the first new reactor licensing framework in decades. Part 53 creates a flexible, technology-inclusive pathway for advanced reactors, and the NRC completed the rulemaking well ahead of December 31, 2027, the deadline set by the Nuclear Energy Innovation and Modernization Act of 2019 (NEIMA) (Public Law 115-439). Now that the NRC has issued Part 53, its challenges shift to implementing the new rule, developing or refining relevant guidance, and identifying opportunities to make its licensing procedures even more efficient. The NRC also faces the critical task of maintaining public trust by demonstrating transparency and technical competence when evaluating innovative reactor designs, particularly considering ongoing concerns about potential nuclear safety and environmental impacts.

[2] The NRC refers to “advanced reactors” as including non-light water reactor designs and small modular light water reactors.

Ongoing and Completed Actions:

- The NRC granted TRISO-X its first-ever license to commercially manufacture fuel for advanced reactors in February 2026. TRISO-X submitted its license application in April 2022. The NRC approved the application three months ahead of schedule due to efficiencies in its review process.

- In March 2026, the NRC issued a construction permit to US SFR Owner, LLC, a wholly owned subsidiary of TerraPower, for the Kemmerer Power Station Unit 1 reactor facility. This approval marked the first time in over 40 years that the agency has issued a construction permit for a commercial non-light-water reactor.

- The NRC proposed a new licensing framework for microreactors and other reactors that have a similar low-risk profile—10 C.F.R. Part 57—in April 2026. This rule would create a fast, flexible, and simplified licensing framework specifically for microreactors and low-consequence reactors. It is designed to lower licensing costs for these reactors, accelerate their deployment, and support factory-made fleets of nuclear power plants.

- In June 2026, the NRC proposed a materials licensing rule—Modernizing Materials Licensing—that would make broad regulatory changes involving 10 C.F.R. Parts 30, 37, 40, 51, 70, 72, and 140. The primary objective was to streamline the deployment of next generation nuclear technologies and rebuild the domestic fuel cycle by eliminating unnecessary administrative burdens and updating storage requirements to accommodate new and advanced nuclear fuels. The proposed rule would also revise certain reporting and recordkeeping requirements.

- In September 2026, the NRC issued a construction permit to Tennessee Valley Authority for Clinch River Nuclear Unit 1. The NRC issued this permit 14 months after acceptance of the application and 4 months ahead of schedule.

Challenge #3: Managing and Addressing Evolving Human Capital Demands

The NRC faces significant human capital challenges over the coming year as the agency grapples with the two prior management challenges identified above. In the summer of 2026, the NRC completed the agency reorganization required by section 4 of EO 14300. This reorganization, the largest since 1987, was designed to speed up decision-making and streamline licensing for next-generation nuclear technologies. The reorganization aligns with the NRC's human capital goals by streamlining workforce placement, consolidating internal support, and shifting focus toward new licensing demands.

As employees adjust to the new organizational structure, leadership will need to maintain workforce stability to ensure the agency continues to carry out its regulatory licensing and oversight effectively. While the agency adjusts to its new organizational structure, it also faces the potential loss of experienced staff, with nearly one-third of its workforce eligible to retire. The departure of these employees could result in the loss of valuable institutional knowledge that cannot be replaced quickly. Furthermore, retention of mid-career staff and subject matter experts (SMEs) has become a critical challenge for the agency. Reporting from the Government Accountability Office (GAO) highlighted that the agency faces significant staffing shortfalls and it lost, on net, about 500 staff in various positions from July 2024 through June 2026[3]. This trend comes at a challenging time, as the agency must scale operations to handle a surge in new reactor licensing requests. Recruiting, training, and developing qualified technical staff takes time, making strategic workforce planning essential.

In addition, the NRC expects an increase in applications for advanced reactor and fuel cycle technologies. The review of these applications will require specialized technical expertise and may add to the workload of a workforce already adapting to organizational change.

To address these challenges, the NRC will need to strengthen succession planning, expand knowledge management efforts, and continue recruiting, retaining and developing the specialized workforce needed to carry out its mission.

[3] https://www.gao.gov/assets/gao-26-108737.pdf

Ongoing and Completed Actions:

- Effective June 15, 2026, the NRC staff implemented a reorganization to adopt a business-line-based organization model for the Office of the Executive Director for Operations (OEDO) and its reporting offices. This reorganization directly implements requirements in EO 14300.
- Under the new organizational structure, the Office of the Chief Human Capital Officer (OCHCO) will continue to manage the agency's human capital functions. The agency has dissolved the Office of Administration and shifted some of its corporate support functions (such as personnel security) into OCHCO. The NRC expects this consolidation will help the agency meet its statutory 30-percent budget cap (ADVANCE Act Section 503) on corporate support.
- The agency's reorganization moved technical training programs and knowledge management from OCHCO to the Office of Nuclear Regulatory Research, allowing human capital professionals to focus on strategic workforce planning, human capital policy and employee leadership development, while technical groups manage staff technical training.

Challenge #4: Ensuring an Effective Information Security Program and Managing the Impact of Super Intelligence

The security and operations of the NRC's information technology (IT) must remain a focus for the agency. The NRC will be challenged to support a future-ready work environment that has the tools, technology, skills, and knowledge necessary to meet the agency's current and future mission needs. Among other actions, the NRC must continue to develop and implement a Super Intelligence (SI) framework that supports the agency's mission by improving operational efficiency, productivity, and decision-making.

The NRC's framework must also account for federal policies directed at Super Intelligence (SI) usage, including the policies stated in EO 13859, *Maintaining American Leadership in Artificial Intelligence*; EO 13960, *Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government*; EO 14179, *Removing Barriers to American Leadership in Artificial Intelligence;* and, EO 14434, *Inaugurating the Era of Super Intelligence*. Consistent with these EOs, the NRC must cultivate an SI-proficient workforce and keep pace with SI technological innovations. Furthermore, the NRC must continue to meet federal statutory and regulatory mandates for Information Technology and Information Management (IT/IM). The NRC is responsible for maintaining and enhancing IT/IM services and infrastructure to accomplish the agency's mission, while remaining within its statutory budget limitations for corporate support.

SI has the potential to enhance the decision-making processes in the nuclear industry and for the NRC by providing insights into the vast amounts of data generated during the design and operation of nuclear facilities. However, expanding the adoption of SI technologies within the agency and across the industry presents additional challenges that must be considered. Some of the challenges for the NRC include:

- Technical reliability and validation;
- Cybersecurity and physical security considerations; and,
- Workforce expertise, readiness, and training.

Ongoing and Completed Actions:

- In January 2026, the agency submitted its SI use cases, developed in December 2025, to OMB and posted them publicly. In June 2026, the NRC also updated its Rules of Behavior to address the appropriate use of approved generative SI services and reinforce requirements to protect NRC information. Additionally, the Office of the Chief Information Officer issued a Super Intelligence Cybersecurity Standard and implemented SI-focused security controls to strengthen safeguards for SI development, deployment, and operation across the agency.
- In 2026, the NRC made significant progress in leveraging SI as an accelerator to support the successful execution of its core mission functions of licensing, inspection, and rulemaking. In licensing, the agency applied SI-enabled tools to streamline the review and analysis of complex regulatory submittals, including a license amendment review for Vogtle. In inspection, the agency developed an SI Companion to assist inspectors with document analysis, timeline development, and preparation of inspection findings. In rulemaking, the agency implemented SI capabilities to improve draft responses to public comments and streamline the processing and analysis of public input. The NRC also advanced SI applications supporting project management, software modernization, and regulatory information management.
- The NRC has expanded external engagement on SI through technical sessions at the 2026 Regulatory Information Conference, the NRC SI Symposium, and a public SI workshop. The agency also continues to coordinate with Department of Energy national laboratories on SI tabletop exercises and to engage international partners on lessons learned and best practices. These efforts support transparency, shared learning, and responsible SI adoption across the nuclear regulatory community.
- The agency established SI training metrics in fiscal year (FY) 2026 to support the NRC's goal of cultivating an SI-proficient workforce that can responsibly leverage emerging technologies. The targeted training and education initiatives were implemented to build an SI-ready workforce.

Challenge #5: Managing Financial Resources and Enhancing Accountability

The NRC is implementing measures to improve operational efficiency and promote greater accountability within its licensing procedures and billing practices. Pursuant to NEIMA, the NRC is required to recover its annual budget through fees, to the maximum extent practicable, with specified exemptions for certain excluded activities. In implementing EO 14300, the NRC established fixed fee caps to promote cost predictability, efficiency, and accountability. The caps include an exception for delay or cost overrun caused by a verified applicant failure. Effective implementation requires appropriate financial controls and oversight to ensure that fees are accurately calculated, assessed and billed in accordance with applicable regulations and established fee requirements.

The NRC also must continue to seek opportunities to reduce corporate support expenditures while maintaining operational effectiveness. Under NEIMA, as amended by the ADVANCE Act, the NRC must, to the maximum extent practicable, limit corporate support costs in its annual budget request to no more than 30 percent of the NRC's total budget authority. Minimizing operational inefficiencies in this area should remain an ongoing priority for the NRC.

Additionally, the NRC is required to consistently meet federal standards for accountability and financial reporting. To meet these standards, the NRC must comply with financial management requirements, submit timely and accurate performance and financial reports, and provide accurate financial data to Congress and other stakeholders.

Ongoing and Completed Actions:

- In December 2025, the NRC received an unmodified (clean) audit opinion on its fiscal year 2025 financial statements and internal controls over financial reporting.

- In May 2026, the OIG concluded that the NRC complied with the requirements of the Payment Integrity Information Act of 2019 for FY 2025.

- In June 2026, the NRC amended 10 C.F.R. Part 170 to establish fixed fee caps on service fees for licensing and other applicant and licensee-requested activities, in accordance with EO 14300.

- The NRC's Fee Billing Engine became operational on October 1, 2026, and will improve the billing capabilities within the core accounting system. It will provide the functionality to monitor fixed fee caps and related data elements to support accurate billing processes.

Reporting to the OIG

The Hotline Program provides NRC and DNFSB employees, other government employees, licensee/utility employees, contractors, and the public with a confidential means of reporting suspicious activity concerning fraud, waste, abuse, and employee or management misconduct. Mismanagement of agency programs or danger to public health and safety may also be reported. The OIG does not attempt to identify persons contacting the Hotline anonymously.

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Submit an Online Form:
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Write:
U.S. Nuclear Regulatory Commission
Office of the Inspector General
Hotline Program
MS O12-A12
11555 Rockville Pike
Rockville, Maryland 20852-2738

If you wish to provide comments on this report or suggestions for future reports, please email the OIG at audit.comments@nrc.gov.

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.