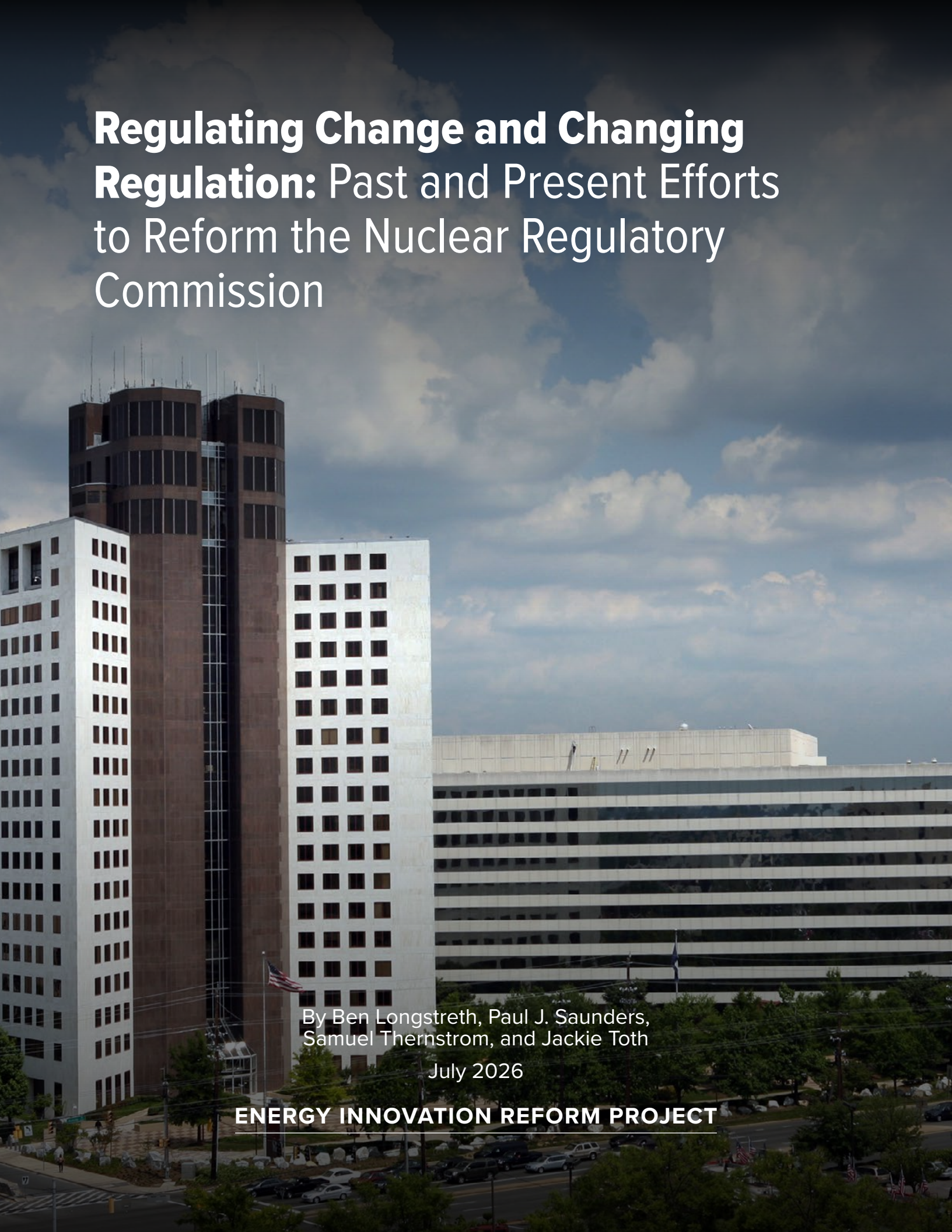


A photograph of the Nuclear Regulatory Commission (NRC) building in Washington, D.C. The building is a large, modern structure with a prominent central tower and two long, rectangular wings. The central tower has a dark, cylindrical upper section with a grid of windows. The wings are white with a grid of windows. The building is set against a sky with scattered clouds. In the foreground, there are trees and a parking lot with several cars.

Regulating Change and Changing Regulation: Past and Present Efforts to Reform the Nuclear Regulatory Commission

By Ben Longstreth, Paul J. Saunders,
Samuel Thernstrom, and Jackie Toth

July 2026

ENERGY INNOVATION REFORM PROJECT

Regulating Change and Changing Regulation: Past and Present Efforts to Reform the Nuclear Regulatory Commission

© Copyright 2026. Energy Innovation Reform Project. All Rights Reserved.

ISBN: 978-1-7359335-8-0

By Ben Longstreth, Paul J. Saunders,

Samuel Thernstrom, and Jackie Toth

Energy Innovation Reform Project

10306 Eaton Place, Suite 300 Fairfax, VA 22030

E-mail: info@innovationreform.org

www.innovationreform.org

Cover design and layout by Ari Winkleman

Editing and proofreading by Anne Himmelfarb

Cover art by Nuclear Regulatory Commission

Cover: The Nuclear Regulatory Commission's headquarters building in Rockville, Maryland

The authors gratefully acknowledge the research contributions to this report from Rani Franovich, Nuclear ROSE Consulting.

Energy Innovation Reform Project is a non-partisan non-profit organization dedicated to promoting policies that advance innovation in energy technologies and practices to improve the affordability, reliability, safety, and security of American energy supplies and our energy economy. EIRP was founded in Washington, DC in 2013. Its work combines policy reports, scholarly research, and economic modeling with creative efforts to bridge partisan differences over energy policy.



Contents

Executive Summary	1
Introduction	3
1. A Concise History of Nuclear Regulatory Reform	5
2. Current Reform Efforts	11
3. Lessons From NRC History	17
4. Recommendations	20
About the Authors	25
Endnotes	26

Executive Summary

As part of its effort to expand the domestic reactor fleet, the federal government has recently directed the US Nuclear Regulatory Commission (NRC) to undertake a sweeping revision of its licensing and permitting rules and procedures. The aim is to improve the speed, efficiency, and consistency of the NRC's operations. But Congress and the administration must take care that these revisions achieve their goals without affecting the public's confidence in the NRC's independent, expert oversight of nuclear safety, or the public's broad support for further development of nuclear energy in the United States.

The NRC is familiar with internal and external calls for procedural and cultural change, which have come from its staff, Congress, critics, and occasionally the nuclear industry. Since its founding in 1975, the NRC has taken numerous steps to modify its posture toward applicants and licensees and to revise the processes required of them.

Only four years after the NRC's establishment, the 1979 Three Mile Island accident led to internal and congressional direction to prioritize safety at existing reactors over new reactor licensing. In response, the NRC began to hold nuclear utilities to stricter operational standards, but the reforms frustrated licensees, who felt that regulators were perversely distracting them from their focus on significant safety issues by excessively emphasizing prescriptive standards. By the mid-1990s, prompted by industry complaints, congressional overseers of the NRC demanded that it establish more objective performance criteria and give licensees more latitude to meet them. The resulting Reactor Oversight Process, established in 2000, was the NRC's first comprehensive performance-based, risk-informed approach to regulation.

The NRC has also had to adjust to meet fluctuating demand for new nuclear licenses and to evaluate new kinds of reactors. Amid the anticipated nuclear renaissance of the early 2000s, the agency staffed up, and Congress increased its budget by two-thirds to handle the expected wave of new reactor applications. When the renaissance did not materialize, the NRC downsized and worked to become a nimbler agency, capable of doing more with less.

By the mid-2010s, the arrival of new advanced reactor developers began to attract significant congressional attention. At Congress's direction in 2019, the NRC began work on a new licensing pathway for advanced reactors to enable technology-neutral licensing. In 2024, in response to the growing recognition of nuclear power's benefits, including its unparalleled reliability, strong safety record, and pollution-free electricity production, Congress required the agency to update its mission statement to reflect the societal benefits of nuclear energy.

There are signs that recent reform efforts are producing positive results. But as additional reforms are contemplated, it is essential to recognize that some agency reforms can slow action. Indeed, some reforms may require years-long institutional adaptation as both the NRC and the private sector firms subject to its oversight learn how to make the restructured agency work efficiently. Congress and the administration should ensure that any additional reforms will achieve real efficiency gains in the critical next few years, when many expect and hope for a surge of new reactor licenses. This is a time for

narrowly targeted adjustments rather than sweeping change.

The following proposed reforms are designed to achieve efficiency gains over the next few years:

- 1. Reduce the direct cost of licensing** by reducing or eliminating application fees (and funding the NRC through general appropriations).
- 2. Improve the efficiency of the licensing process:**
 - a. Re-enable the NRC to conduct early stakeholder engagement on rulemakings.
 - b. Streamline National Environmental Policy Act compliance through use of environmental assessments, categorical exclusions, and the Generic Environmental Impact Statement rule.
 - c. Eliminate mandatory hearings.
 - d. Focus the Advisory Committee on Reactor Safeguards on novel and high-risk issues rather than routine matters.
- 3. Empower the NRC to execute its mission efficiently:**
 - a. Provide sufficient staff capacity in key offices.
 - b. Support development of a strong NRC workforce pipeline.
- 4. Foster ongoing agency excellence:**
 - a. Establish a stakeholder advisory committee.
 - b. Assess the value of the “as low as reasonably achievable” standard and look for other potential opportunities to improve regulatory efficiency.
 - c. Model cultural change from the top.

Introduction

The second Trump administration has placed a very high priority on the swift review, approval, and construction of new nuclear reactors to promote energy security and economic growth. Toward this end, it has undertaken a range of actions, from targeting the construction of new AP1000 light-water reactors to spurring pilot demonstrations of next-generation nuclear plants, including supporting several reactors to reach criticality by July 4, 2026. The aim is to bring new nuclear energy capacity online to meet rising energy demand and reclaim global leadership in this strategically important technology. Aims do not translate directly into outcomes, however, so policymakers must take care to craft policies that produce desired results and that are sustainable over extended periods, which are required not only to build nuclear power plants, but also to repay investors in a manner that allows for further construction.

A cornerstone of the administration's nuclear policy is the reform of regulations in ways that accelerate the approval and construction of new reactors. Executive Order (EO) 14300, for example, requires the US Nuclear Regulatory Commission (NRC) to review all its rules and guidance and to streamline and modernize its activities. More than 25 new NRC rulemakings are underway as a result.

EO 14300, however, arrives while the 2024 Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy (ADVANCE) Act and earlier Nuclear Energy Innovation and Modernization Act (NEIMA) are still being implemented at the NRC. Those reforms are the latest in a long history of legislative, industry, and internal efforts to encourage and even compel cultural and procedural change at the NRC. Reform actions are a hallmark of the NRC's five-decade existence. The agency has frequently reconsidered its regulatory posture toward its licensees, often at the urging of industry and the behest of Congress. It has had to work to carry out its public safety mandate under both internal and external pressures to work faster and more efficiently, while also maintaining its independence, credibility, and performance as a regulator.

Congress, the administration, the nuclear industry, and the NRC are broadly aligned on the notion that the United States cannot achieve nuclear leadership without a regulator that is focused on its mission, agile, supported, and demonstrably ready to license modern reactor designs at scale. The agency can and should increase its efficiency and timeliness to enable the domestic expansion of nuclear energy. However, there is also a real risk of overcorrection: too much restructuring can reduce efficiency. More problematic still is that reforms may affect public confidence in the safety of nuclear energy or reduce congressional support for it, in turn undermining hard-won public backing and investor confidence; or they may provoke political battles over the agency's work that end up quashing projects slowing the flow of private capital, and increasing uncertainty for developers. These outcomes would likely also thwart US national interests in a reliable and clean energy supply and in international economic and technological leadership.

As the Trump administration and the NRC work to reshape the agency's rules and procedures, it is important to reflect on the lessons from similar past efforts. The record strongly suggests that a measured approach to regulatory reforms is most likely to produce a sustained revival of the domestic nuclear energy economy.

Section 1 of this report provides a brief history of past efforts to reform the NRC and adopt performance-based and risk-informed regulations. Section 2 outlines recent and ongoing reform efforts. Section 3 identifies key lessons. Section 4 presents a set of recommendations for pragmatic NRC reforms that could support a strong domestic civil nuclear sector and protect the public.

1. A Concise History of Nuclear Regulatory Reform

Prior to 1954, the United States' research and use of nuclear technology was strictly a military pursuit managed by the Atomic Energy Commission (AEC). The 1954 Atomic Energy Act, in addition to maintaining the AEC's weapons program, opened nuclear energy to commercial research and use.¹ The AEC both regulated and encouraged the peaceful use of nuclear materials, a dual mandate that congressional overseers came to recognize as problematic.²

From the start, the AEC recognized that ensuring the safety of reactors was paramount, both as a matter of public health and for the success of the industry; at the same time, it recognized the risk of overregulation. One commissioner remarked in 1955: "Our great hazard is that this great benefit to mankind will be killed aborning by unnecessary regulation."³

In 1956, debate over Fermi 1—a new type of sodium-cooled, fast breeder nuclear plant proposed for a site approximately 30 miles outside of Detroit—exacerbated concerns over the AEC's regulatory approach. During congressional hearings, the AEC chair stated that he had already committed to appear at the reactor groundbreaking, even though the AEC had not yet completed the regulatory review needed to authorize construction; this assertion raised concerns that he had prejudged the outcome of that review.⁴ The AEC then granted the construction permit, even though the Advisory Committee on Reactor Safeguards (ACRS) had found "there was insufficient information" to conclude that the reactor could be operated safely.⁵ The plant conducted several years of low-power testing, but after reaching full power a problem with the sodium circulation system caused 2 of the 103 fuel assemblies to melt. There was no release of radiation, and the incident did not seriously test the reactor's multiple layers of protection.⁶ Nevertheless, the incident was fodder for a book with the sensationalist title "We Almost Lost Detroit."⁷ Engineers' refutations of this claim, while correct, remain harder to find than the original alarmist work.⁸

The AEC faced further strain as the number of reactor license applications and construction projects jumped in the 1960s, leading to a sixfold increase in the licensing and inspection caseload for a staff that had increased by only 50 percent.⁹ Utilities planning to meet growing electricity demand with new nuclear plants grew frustrated over the pace of licensing.¹⁰ The average length of time to receive a construction license jumped from 13 months in 1966 to 37 months in 1970.¹¹ The DC Circuit Court of Appeals' 1972 decision requiring the AEC to conduct a National Environmental Policy Act (NEPA) analysis for every licensing decision exacerbated the situation: it added approximately two years to the timeline for all the licensing decisions before the commission at the time, and was retroactively applied to decisions made since NEPA's enactment.¹²

Concerns about reactor safety also grew at this time, as fears about radioactive fallout from nuclear weapons testing affected public perceptions of nuclear energy.¹³ Publication of a worst-case accident scenario by the AEC (the "WASH-740" study) added to these concerns, as did discussion of the possibility of a reactor meltdown breaching containment.¹⁴ This climate of fear led to a marked increase

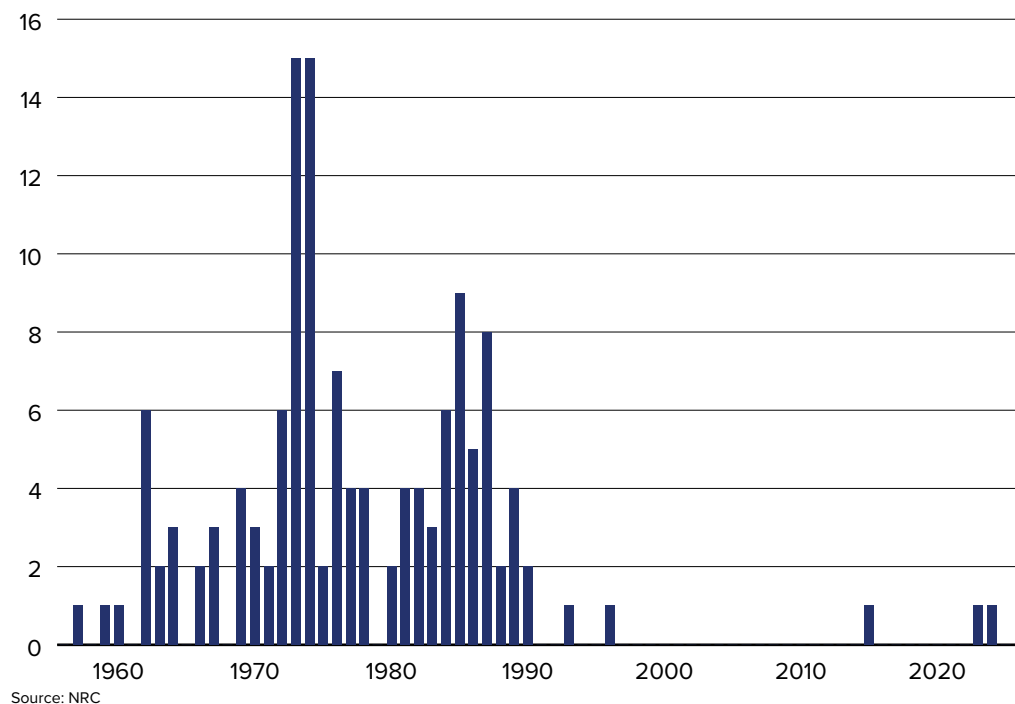
in the number of contested hearings; there was only one contested hearing with a “major intervention” in 1966; in 1970, there were nine.¹⁵

Consequently, the AEC faced growing pressure from nuclear proponents to license reactors more quickly and from critics to strengthen its safety regulations.¹⁶ Anxiety over the AEC’s ability to manage these dual missions finally resulted in a decision to split the two functions. The Energy Reorganization Act of 1974 created the Energy Research and Development Administration (ERDA)—a Department of Energy (DOE) predecessor—to handle promotion of nuclear power, and it created the Nuclear Regulatory Commission to address safety.

An Early Test for the NRC

Only four years after the NRC’s establishment, the accident at Three Mile Island (TMI) Nuclear Station tested the agency’s reputation and drove a shift to stricter oversight. Much like the AEC, the NRC had sought to regulate “power plants not people” and took care not to question licensee’s ownership of plant safety.¹⁷ In the aftermath of the TMI accident on March 28, 1979, this approach changed, and the NRC came to focus on the need to ensure operational safety. It tightened licensing requirements on operators, began stationing two resident inspectors at every nuclear plant, and formed a new office to begin the systematic collection and review of operating plant data. At Congress’s urging, the NRC also revised emergency preparedness requirements.¹⁸

Figure 1. Number of Commercial Nuclear Power Plant Full-Power Operating Licenses Issued, by Year

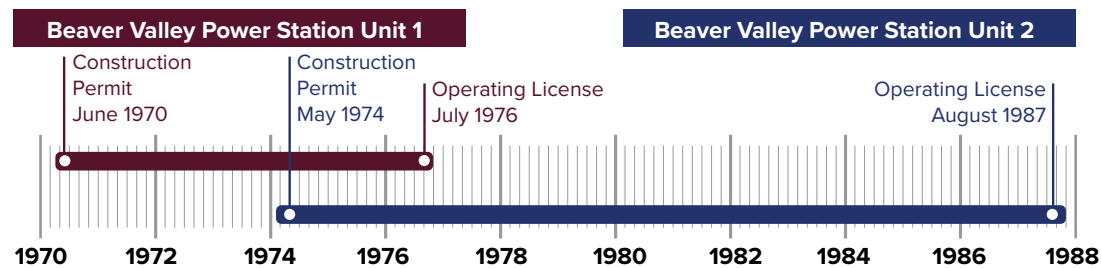


Despite these steps, confidence in the NRC was not strong. The public worried about the safety of nuclear energy generally, and was unsure of the NRC’s mettle as a regulator. At President Jimmy Carter’s direction, a commission of experts, both for and against civil nuclear energy, investigated the TMI accident and the suitability of the NRC’s procedures; the resulting 1979 Kemeny Report criticized

the NRC for focusing on licensing at the expense of safety, accusing it of harboring “some of the old AEC promotional philosophy in key offices below the top.”¹⁹

In response to the Three Mile Island accident, the NRC’s primary focus shifted from the licensing of reactors to the oversight of reactor operations. It updated safety and operator training requirements and bolstered the recently created resident inspector program.²⁰ It issued eight times as many fines in 1987 as it had in 1978.²¹ This shift frustrated plant operators, who claimed in a 1981 survey that the NRC’s frequent issuance of new orders and technical requirements, as well as extensive reporting obligations, distracted from their focus on safe operations.²²

Figure 2. Comparative Periods Required to Issue Construction Permits and Operating Licenses for Beaver Valley Power Station Units 1 and 2



Source: NRC

At the same time, reactor licensing and plant construction slowed, and construction costs—which started to balloon in the 1970s—remained high as licensing requirements evolved.²³ Prior to the Three Mile Island accident, reform efforts focused on reactor standardization as the key to speeding licensing and construction.²⁴ But even before the accident, utilities’ orders for new reactors had slowed. No new orders had been placed since 1978, and after TMI the NRC suspended issuance of new operating licenses until February 1980. Utilities with nuclear construction projects underway either canceled them or completed them later in the 1980s.²⁵ Those utilities that persevered experienced significant delays. The contrast is illustrated by Beaver Valley Power Station Unit 1 and Unit 2: The construction permit for Unit 1 was granted in June of 1970 and the operating license was granted six years later. The construction permit for Unit 2 was granted in 1974 but unit 2 did not received its operating license until 1987, eleven years later.²⁶

Frustrated Licensees

Through the 1980s and into the 1990s, the NRC’s more intense oversight of existing operating reactors remained a source of frustration to nuclear plant operators. The NRC recognized some of its problems early, and in 1982 it hired a team of social scientists to study its organizational management. This team observed subjectivity in staff’s assessments of licensees and noted that site assessments were conducted without adequate training.²⁷ In 1987, the NRC sought to modernize its regulatory oversight by adopting performance-based inspections, where the focus would be on observation of plant operations rather than on documentary compliance.²⁸ These reforms did not resolve utilities’ concerns.

In 1994, several nuclear utilities commissioned an independent assessment of the NRC by the consulting firm Towers Perrin.²⁹ The study found that the NRC’s official rules ensured plant safety, but that inspectors often required actions that went beyond regulatory obligations.³⁰ This approach by inspectors diverted resources from safety, raised electricity costs, and risked loss of public support for nuclear energy.³¹ Of particular concern was the fact that 41 percent of surveyed plant employees

“reported retribution by the NRC for not acceding to NRC requests.”³² Towers Perrin’s suggested remedies included more consistent application of NRC policies, supervision of NRC field staff by headquarters, and greater openness to working in a spirit of mutual trust and respect.³³

Some of Towers Perrin’s conclusions were corroborated elsewhere. For example, a 1995 audit from the NRC Office of Inspector General (OIG) found that “although NRC’s policy prescribes that inspectors use direct observation and focus on issues with greater safety significance, inspectors and supervisors lacked a clear concept of how to do this.”³⁴ The NRC had started seeking more regular feedback from licensees as early as 1991, but the agency expanded these channels following the release of the report.³⁵

The NRC’s Near-Death Experience

In response to these criticisms, the NRC sought to make better use of risk-informed, performance-based regulations and probabilistic risk assessments (PRAs). Performance-based regulations were intended to focus on end results—reactor safety—while allowing for greater flexibility in how that result was achieved.³⁶ With the support of industry, the agency had started to explore use of PRAs to predict risk impact in the 1970s. The 1975 Reactor Safety Study, known as the Rasmussen Report, supported the use of PRAs, which the NRC began to apply around this time.³⁷ The US General Accounting Office (now the Government Accountability Office) applauded the NRC’s acceptance of PRAs but cautioned against their use “as the sole or primary basis for regulatory decisions” in light of limited risk data.³⁸

However, some of the Rasmussen Report’s conclusions drew criticism, especially the executive summary’s assertion that reactor accidents are less likely than fires, toxic releases, airplane crashes, and natural disasters, and that their consequences are less serious. The NRC eventually withdrew its approval of the executive summary for this reason.³⁹ According to later analysis, however, the report accurately pointed to the type of risk that led to the Three Mile Island accident, as well as the likelihood that the health effects of such an accident would not be serious.⁴⁰

In the mid-1990s, the NRC sought again to allow use of PRAs and incorporate risk-informed, performance-based regulations into its procedures. A 1991 regulation applied PRAs and was considered an attempt at risk-informed, performance-based regulation, while a 1995 policy statement formally encouraged PRAs’ use.⁴¹ Later, the NRC’s 1997–2002 Strategic Plan established an intention to implement risk-informed, performance-based, less prescriptive regulation.⁴²

At the same time, controversy over safety at Connecticut’s Millstone reactor, such as refueling procedures that were inconsistent with the plant’s operating license, created pressure for the NRC to rigorously enforce prescriptive rules.⁴³ In 1997, the NRC OIG faulted the agency for responding to the Millstone controversy by “enforcing strict compliance with all regulatory requirements,” when doing so yielded heightened focus on areas of low safety significance.⁴⁴ The OIG also questioned why the agency’s application of risk-informed, performance-based regulations had resulted in neither cost reductions nor safety improvements.⁴⁵ Still, it encouraged the agency to continue to develop them, in part because risk-informed rules could result in more efficient use of agency staff and resources.⁴⁶

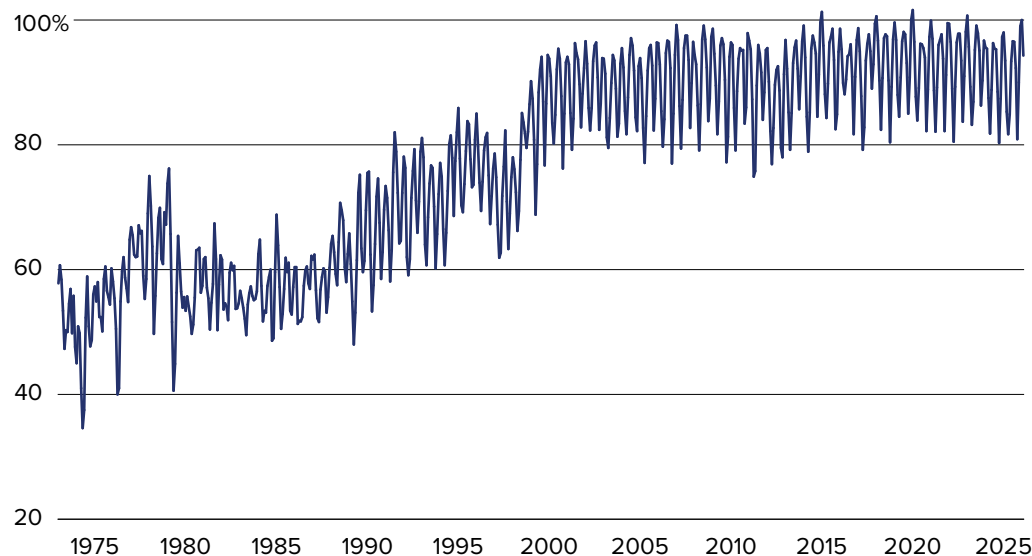
These conflicting pressures—to maintain (or even increase) strict enforcement but also to refocus away from minor compliance and toward meaningful safety issues—continued to mount. Utilities worried that inspector visits could end with punitive and subjective enforcement of safety measures.⁴⁷ But in 1997, the US Government Accountability Office had the opposite concern, faulting the agency for failing to require the correction of licensees’ safety deficiencies and tolerating declining performance at some nuclear plants.⁴⁸ To Congress, the NRC appeared both captured and capricious: heavy-handed when flexibility was warranted, and lenient when accountability was necessary.

These competing forces came to a head in a July 1998 hearing of the Senate Environment and Public Works Committee's nuclear subcommittee, where Nuclear Energy Institute (NEI) President and CEO Joe F. Colvin recounted a nearly 20-year history of failed NRC attempts at reform. He identified regulatory uncertainty as the sector's top business concern and pressed NRC leadership to foster an agency culture that valued results over procedures. He also urged the agency to accelerate its ongoing efforts to adopt risk-informed, performance-based regulations, to apply objective criteria to examine performance, and to provide flexibility to licensees aiming to meet these criteria.⁴⁹

The hearing marked the beginning of what came to be called the NRC's "near-death experience" and "day of reckoning."⁵⁰ Senator Pete Domenici (R-NM) threatened NRC Chair Shirley Jackson with a budget cut of one-third unless her agency established a risk-informed, performance-based regulatory approach; Jackson said that the NRC was already developing one.⁵¹ The NRC went on to suspend its oversight program; it issued a 1999 white paper that directed staff to develop a new risk-informed, performance-based regulatory approach;⁵² and following consultation with industry, it replaced its earlier licensee assessment model with the 2000 Reactor Oversight Process (ROP).⁵³

The ROP represented the NRC's first holistic, objective, performance-based framework with risk-informed thresholds. Developed through a two-year collaborative process, including pilot projects at eight reactors, the new system graded reactor performance issues by their safety significance and modulated the NRC response accordingly. The positive reactions were notable: the changes were praised by industry as well as the former director of the Union of Concerned Scientists' Nuclear Safety Project.⁵⁴ Indeed, NEI praised the continuing success of the ROP approach 25 years later, emphasizing its "openness, predictability and objectivity."⁵⁵

Figure 3. Average Capacity Factors of US Nuclear Power Plants



Source: EIA

While the NRC was working to improve its oversight, the utilities operating the US nuclear fleet transformed it from laggard to global leader in reliability of reactor operations and efficiency of refueling and other maintenance. In the 1980s, US nuclear plants had lower capacity factors than plants in other developed countries; US plants operated just over 60 percent of the time, compared to 68 percent for France and Japan and 74 percent for Germany.⁵⁶ By 2000, US plants had begun to achieve

capacity factors above 90 percent.⁵⁷ Today, the US nuclear fleet continues to be the global leader for reliable operation.

Hope and Heartbreak

In the early 2000s, a confluence of developments encouraged hopes for a nuclear renaissance. Rising energy consumption in the 1990s and climbing electricity rates in the 2000s, coupled with fears over resource competition and depletion, resulted in renewed interest in nuclear energy.⁵⁸ The George W. Bush administration feared unreliable access to oil and gas, and projected that the US would need 1,300 to 1,900 new power plants within 20 years.⁵⁹ A nuclear build-out looked like the solution. Congress authorized loan guarantees and tax incentives for nuclear energy in the Energy Policy Act of 2005. The next year, President Bush announced the Advanced Energy Initiative to increase the DOE's clean energy R&D funding by 22 percent. He also directed creation of the Global Nuclear Energy Partnership (GNEP) to increase the use of nuclear energy.⁶⁰

With these tailwinds, the NRC prepared for a wave of new reactor licensing. Its budget grew from \$669 million in 2005 to more than \$1 billion in 2010, while its staff increased by around one-third, from 3,100 to more than 4,000.⁶¹ From 2009-2011, the NRC staff gave it the top slot for best place to work in the federal government.⁶² Responding to a 2005 Energy Policy Act directive, NRC and DOE in 2008 issued the Next Generation Nuclear Plant Licensing Strategy, which explored how licensing practices might need to evolve for advanced reactors.⁶³ In March 2008, two utilities submitted combined license (COL) applications under 10 CFR (NRC Regulations Title 10, Code of Federal Regulations) Part 52 for AP1000 advanced passive pressurized water reactors at the Virgil C. Summer Nuclear Station (Units 2 and 3) and the Vogtle Electric Generating Plant (Units 3 and 4).⁶⁴ By 2010, utilities had submitted 18 applications for 28 new reactors.⁶⁵

But the renaissance fizzled. Economic and energy developments made nuclear energy less attractive. The Great Recession suppressed electricity demand growth. Hydraulic fracturing and horizontal drilling innovations unlocked vast US shale gas supplies, driving electricity prices sharply down. Gas-fired generation became faster to build, cheaper to operate, and less risky than nuclear. Wind energy, with support from production tax credits, fell in price, too.⁶⁶ Meanwhile, as construction started at four new reactors, the nuclear sector grappled with an atrophied industrial supply chain, declining enrollment in nuclear engineering university programs, and a shortage of skilled workers. Post-9/11 security upgrades (such as the requirement to consider potential airplane impacts) and regulatory practices added substantial new costs and schedule risk to nuclear projects.⁶⁷ And in March 2011, the accident at Japan's Fukushima Daiichi Nuclear Power Plant reignited public concern over nuclear safety and consumed the NRC's attention and resources with safety upgrades.

By 2014, recognizing the nuclear boom was a bust, the NRC began to downsize. The post-Fukushima surge in safety reviews tapered off along with new reactor applications, and several construction projects faced delays and cancellations. To meet a declining workload, the NRC undertook a series of transformation initiatives, beginning in 2014 with Project Aim 2020.⁶⁸ This initiative sought to increase the NRC's agility and "enhance the agency's ability to plan and execute its mission while adapting in a timely and effective manner to a dynamic environment."⁶⁹ It targeted operational and cultural reform to improve accountability, collaboration, and adaptability. The initiative envisioned "One NRC," a high-performing, nimble organization that valued creativity and risk-taking.⁷⁰ Commissioners applauded the work of the internal Project Aim 2020 team, approved most of its recommendations, and nodded to the importance of leadership's support for the initiative.⁷¹ The National Academy of Public Administration (NAPA) agreed: it endorsed NRC leadership's commitment to alter the status quo in order to meet the agency's mission.⁷² The "One NRC" concept, NAPA said, could foster the agency's cultural evolution.⁷³

2. Current Reform Efforts

Regulatory Modernization for New Reactors

In the mid-2010s, with private sector interest in new reactor designs mounting, Congress turned its attention to the NRC's readiness to review and approve advanced nuclear reactors. As early as 1992, the National Academy of Sciences had found the NRC's licensing framework for light-water reactors ill suited for reactors with passive safety systems.⁷⁴ The NRC had approved two licensing paths, the original Part 50, which involved a construction permit followed by an operating license, and Part 52, which involved a combined construction and operating license. Because licensing paths include requirements based on light-water reactor risk factors, industry asked Congress to mandate the development of a new, technology-neutral licensing framework.

An April 2016 hearing of a Senate Environment and Public Works subcommittee explored an early version of the Nuclear Energy Innovation and Modernization Act (NEIMA), which sought increased transparency and accountability at the NRC and reforms to regulations, fees, and mandatory hearings.⁷⁵ Industry witnesses testified that existing nuclear regulations were not well suited to new technologies, while high fees hindered nuclear innovation and development. Senator Sheldon Whitehouse (D-RI), a supporter of nuclear energy, worried that technologies were “smothered in the crib” because they faced an uncertain regulatory pathway. Inflexible, prescriptive NRC regulations, Ashley Finan of the Clean Air Task Force testified, were as poorly suited to assessing advanced reactor designs as catalytic converter specifications would be for assessing electric vehicles.⁷⁶ Victor McCree, NRC executive director for operations, said the agency would be ready to review advanced reactor applications by 2019 under a new licensing framework that was being developed.

Notably, not all nuclear advocates agreed that the NRC needed a new licensing pathway for advanced reactors. According to a September 2018 report on the future of nuclear energy by the Massachusetts Institute of Technology Energy Initiative, any such rulemaking “would take several years and probably would not result in a process that actually expedites licensing.”⁷⁷

During this period, bipartisan congressional and public support for nuclear energy solidified. Nuclear energy was praised variously for being a source of low-emission firm power and for acting as a strategic geopolitical asset. Interest grew in nuclear power for everything from industrial heat generation to reliable electricity for US military bases and remote environments like Alaska and Puerto Rico. Support for nuclear power had been a longtime element of the Republican Party platform, and in 2020 the Democratic Party added support for “existing and advanced nuclear” energy to its platform, marking the first time it had supported nuclear power since 1972.⁷⁸

In this evolving political environment, from 2018 to 2020, Congress enacted bipartisan measures to foster nuclear technological as well as regulatory innovation. It opened the national laboratories up to advanced reactor developers,⁷⁹ directed new regulatory approaches at the NRC for advanced reactors,⁸⁰ and funded cost-shared demonstrations of these technologies.⁸¹

NEIMA, the second of these legislative efforts, was passed in late 2018 and became law in early 2019. The act marked the first major nuclear regulatory reform statute to pass in decades. It mandated the creation of a technology-inclusive licensing framework that was performance-based and risk-informed and required transparent performance metrics for efficiency and accountability.⁸²

Meanwhile, industry efforts to modernize licensing bore fruit. DOE had supported an industry-led, cost-shared Licensing Modernization Project (LMP) since 2016. Southern Company, a public utility, led the project, which focused on creating a probabilistic, risk-informed, performance-based approach to licensing.⁸³ In August 2019, NEI formally submitted its “Risk-Informed Performance-Based Technology-Inclusive Guidance for Non-Light Water Reactor Licensing Basis Development,” a methodological framework for analyzing the safety of new reactors.⁸⁴ The NRC endorsed NEI’s framework as an acceptable methodology for demonstrating that a proposed reactor met the NRC’s regulatory requirements under 10 CFR Parts 50 and 52, the regulations establishing the licensing rules.⁸⁵ The endorsement marked the first-ever NRC-approved framework for developing a licensing basis for non-light-water advanced reactors.

In response to NEIMA, the NRC began to consider development of a new licensing pathway, Part 53, and proposed the relevant formal plan in April 2020.⁸⁶ In October 2020, NEI urged that Part 53 include lessons learned from the Licensing Modernization Project; that it incorporate a risk-informed, performance-based approach; and that it allow PRA alternatives, “while also recognizing that the near-term experience is constrained by the limitations of having to comply with 10 CFR Part 50 and Part 52.”⁸⁷ Ultimately, however, after more than 30 public meetings, stakeholders worried the rule would not speed up or accommodate a higher volume of reactor applications.⁸⁸ Staff revised it and took comments through February 2025.⁸⁹ The NRC released the final Part 53 rule on March 30, 2026.⁹⁰ Early reviews of Part 53 indicate that it includes some significant licensing improvements for qualifying advanced reactors.⁹¹

Advancing a New Mission

In the early 2020s, the nuclear industry and Congress felt that NEIMA had not done enough to reform the NRC. Meanwhile, as advanced reactor developers moved up their anticipated deployment dates from the 2030s to the late 2020s, the sense of urgency around the NRC’s readiness to review and license new reactors deepened.

Nuclear advocates, for example, questioned the focus of the Advisory Committee on Reactor Safeguards (ACRS), an expert review body with roots dating to 1947.⁹² The ACRS is tasked with reviewing every license application, including those for well-understood light-water reactors. Some advocates argue this requirement may make it harder for the ACRS to meet its more important task of reviewing license applications by novel non-light-water reactors.⁹³ The Nuclear Innovation Alliance (NIA), a nonprofit organization, interviewed nuclear regulators, NRC staff, and current and former ACRS members, and concluded that the ACRS process for review of light-water reactors was overly long, inefficient, and generally not useful, whereas the process was valuable for new reactor designs and other new safety-significant issues.⁹⁴

To further support nuclear, Congress passed the ADVANCE Act in 2024 with overwhelming bipartisan support. The act reinforced NEIMA’s mandate for risk-informed, performance-based regulation; expanded NRC’s direct hire authority; authorized competitive grants to cover advanced reactor licensing costs; and directed the NRC to consider how to improve its oversight and inspection programs under the ROP, which NRC staff submitted in June 2025.⁹⁵ The law also called on the NRC to lower user fees for advanced reactor applicants and pre-applicants until September 30, 2030. In FY2025, the NRC set this lower rate at \$148/staff hour — less than half of the agency’s professional hourly rate for other activities.⁹⁶

The ADVANCE Act further required that the NRC update its mission to reflect the objective of “not unnecessarily limit[ing]” safe use of nuclear energy.⁹⁷ On January 24, 2025, the NRC changed its mission statement from one largely description of its activities (“The NRC licenses and regulates the nation’s civilian use of radioactive materials, to provide reasonable assurance of adequate protection of public health...”) to one that focused on its objectives of protecting public health and safety and “enabling safe and secure use and deployment of civilian nuclear energy technologies.” The new statement reads:

The NRC protects public health and safety and advances the nation’s common defense and security by enabling the safe and secure use and deployment of civilian nuclear energy technologies and radioactive materials through efficient and reliable licensing, oversight, and regulation for the benefit of society and the environment.⁹⁸

Trump 2.0 and Executive Order 14300

President Trump began his second term in office at another inflection point for the nuclear sector. Supported by unexpected increases in actual and forecast electricity demand, by investor interest, and by a continuously positive policy environment throughout the previous three administrations, advanced reactor developers and fuel cycle firms continued to attract capital and to progress with their projects. In 2024, the NRC indicated that it expected to receive applications for 25 new small modular and advanced reactors by 2029.⁹⁹ Venture capital investments in new nuclear companies hit an all-time high in 2025.¹⁰⁰ Visible bipartisan political support for nuclear energy was an essential foundation for this level of interest by investors.

The strong growth in electricity demand is now spurring both market and broad state-level interest in adding nuclear capacity. The excitement surrounding nuclear energy is expanding beyond novel advanced reactors as the AP1000 units at Vogtle 3 and 4, which began commercial operation in 2023 and 2024, appeared technically successful despite their high cost. This outcome has prompted talk of large, multi-plant investments.¹⁰¹

In parallel, swelling power demand and eager data center developers are driving efforts to get more energy from existing nuclear plants. Applications for power uprates at existing reactors are expected to rise dramatically in the next few years and to add 2.4 GW of capacity between 2025 and 2032.¹⁰² Customers and investors have also begun reopening nuclear plants that shut down in recent years. The Palisades plant is close to reopening in Michigan, and work is underway to reopen closed nuclear plants in Pennsylvania (a unit at the renamed Three Mile Island site) and Iowa.¹⁰³ California has reversed a decision to close its Diablo Canyon plant; the NRC recently extended the licenses for the plant’s two units to 2044 and 2045, respectively, though the state legislature will have to approve operations beyond 2030.¹⁰⁴

On May 23, 2025, President Trump signed four executive orders designed to reboot America’s nuclear enterprise and position the US for global leadership in nuclear technologies and fuel supply.¹⁰⁵ One of these, EO 14300, chastised the NRC for “throttling nuclear power development” by “trying to insulate Americans from the most remote risks” and “ignoring the reality that substitute forms of energy production also carry risk.”¹⁰⁶ The EO reiterated Congress’s direction to the NRC to consider the benefits of nuclear energy in applying its new mission. It directed an 18-month “review and wholesale revision of its [the NRC’s] regulations and guidance documents”; required deadlines for licensing activities enforced by fee caps; and called for a high-volume licensing process for advanced reactors. The EO further required a less-burdensome ROP, a reorganization grounded in a reduction in force (outside of reactor licensing), and an expedited licensing pathway for reactors approved by DOE or the Pentagon, among other directions.

To implement the EO, the NRC (in coordination with the Department of Government Efficiency [DOGE] staffer assigned to the NRC) has developed (or is developing) more than 25 new rulemakings.¹⁰⁷ On February 4, 2026, the agency launched a reorganization focused on consolidation and efficiency; it aimed to have an updated “organizational chart and change management plan” by early April, and to complete reorganization by the end of the fiscal year (September 30, 2026).¹⁰⁸ Aspects of the reorganization are already taking effect: In early March, the agency announced that NRC’s Jeremy Bowen, who was the acting deputy director for new reactors, will lead the new Office of Advanced Reactors once it is formally established. Bowen and his office will be tasked with efficient licensing and permitting of new reactors.¹⁰⁹

Other rulemakings that began under the Biden administration are now under final review. In October 2024, NRC issued a proposed rule to establish the Generic Environmental Impact Statement (GEIS) option, which allows license applicants to meet environmental review requirements under NEPA.¹¹⁰ Now finalized, the rule is expected to enable eligible applicants to meet NRC environmental review requirements at reduced time and cost if they meet certain criteria related to factors such as size and location.¹¹¹ On July 1, 2026, the NRC proposed a significant, multi-part revision of its licensing rules titled, “Modernizing Reactor Licensing, Safety Oversight, and Siting Practices.”¹¹² The NRC described the proposal as the “most comprehensive modernization of reactor licensing in decades.”¹¹³

Congress has recognized the progress made by the NRC but has also expressed concern over some of the administration’s actions at the NRC. On September 3, 2025, members of the Senate Environment and Public Works Committee acknowledged NRC staff’s work toward implementing the ADVANCE Act;¹¹⁴ according to Chair Shelley Moore Capito (R-WV), EO 14300 complements that law by setting clear deadlines and reconsidering the agency’s organization and regulations.¹¹⁵ In contrast, Senator Whitehouse (D-RI) worried that the Trump administration’s actions at the NRC, particularly the firing of Commissioner Christopher T. Hanson and the placement of DOGE staffers at the agency, risks undermining public support for nuclear energy.¹¹⁶



Inspectors at Michigan’s Donald C. Cook Nuclear Plant in 2003.
Flickr/Nuclear Regulatory Commission

The Trump administration in its second term has focused on demonstrating new advanced reactors at DOE and Pentagon sites prior to NRC review. With reactor pilot projects targeting criticality of three reactors by July 4, 2026, the DOE on February 2, 2026, approved categorical exclusions under NEPA for such projects.¹¹⁷ Idaho National Laboratory Director John Wagner said the move is a natural step, given the “extensive environmental baselines from previous NEPA analyses.”¹¹⁸

In December 2025, the NRC set expectations for NRC staff’s involvement in the other agencies’ reactor authorization processes when the applicant also intends to seek a commercial license from the NRC. The NRC “can observe selected portions of the process at the prospective applicants’ election to gain familiarity with both the technology and the safety cases . . . with the intent of achieving greater efficiency in the subsequent NRC licensing proceeding.”¹¹⁹ The degree of efficiency arising from this collaboration is still uncertain, given that a new design seeking a commercial license will need to show NRC staff that it meets the NRC’s licensing criteria; neither DOE approval nor a period of successful operations on a DOE site will be sufficient in itself.

EO 14300 also directs the NRC to reconsider the longstanding “as low as reasonably achievable” (ALARA) radiation exposure standard and its reliance on the linear no-threshold (LNT) model. Under the standard,

which the NRC adopted in 1972, there is no threshold below which ionizing radiation can be considered “safe.” Instead, the agency requires that plant operators continue to limit exposure to radiation at any level, based on the LNT model’s assumption that any dose of radiation can be harmful.¹²⁰

The LNT model is used to calculate cancer risk as exposure increases.¹²¹ Radiation experts disagree about whether low levels of radiation cause harm, particularly levels below the natural background levels that exist in parts of the world.¹²² Critics of ALARA argue that the costs of further reducing already low exposure levels exceed the harm such exposure might cause and also require reductions below levels readily accepted for other sectors.¹²³

In 2015, three scientists, including Dr. Carol Marcus, a professor of radiation oncology and radiation sciences at UCLA, filed petitions with the NRC to amend LNT. In 2021, the NRC denied the petitions, maintaining that although “it is generally impossible to determine whether or not there are any increases in the incidence of disease at very low doses,” the LNT model “continues to provide a sound regulatory basis” for public safety.¹²⁴ In 2025, scientists from the Idaho National Laboratory wrote a report summarizing the science and recommending that the NRC reconsider the use of LNT, set a higher annual occupational dose limit, and eliminate the ALARA requirement below that higher limit. Doing so, the report argued, would make reactors more cost-competitive with no adverse health impact.¹²⁵

Nevertheless, the nuclear community is not aligned on a path forward. Katy Huff, assistant secretary of nuclear energy at DOE under President Biden, has urged the NRC to refrain from changing the standard until scientists conduct more long-term epidemiological studies.¹²⁶ NEI has said that it supports maintaining ALARA for existing plants but removing it for new reactors.¹²⁷ Other experts express concern that, even if scientifically justifiable, revising or eliminating the standard could undercut public confidence in nuclear power.¹²⁸

For its part, DOE approved the elimination of ALARA and LNT from its regulations in January 2026, saying that the approach costs too much without resulting in commensurate health benefits.¹²⁹ Lawmakers on both sides of the aisle, former Biden administration officials, and the financial community have variously praised and opposed DOE’s move.¹³⁰ On July 1, 2026, the NRC issued a proposal to amend its ALARA regulations.¹³¹ The NRC’s proposal would retain the LNT model but replace the open-ended ALARA approach with a “less-subjective, graded approach to managing doses below regulatory limits.”¹³²

The NRC has continued to issue new regulatory proposals implementing EO 14300 at a rapid pace. Compared with historical NRC reform efforts, this one may prove to be the most comprehensive—but questions about the effectiveness of reforms will continue.

Evidence of Progress at the NRC

At the NRC’s first annual Regulatory Information Conference in 1989, Executive Director of Operations Victor Stello Jr. described frankly the tension between the NRC and the nuclear industry: “We do not trust you, you do not trust us.”¹³³ Thirty-eight years later, the relationship has changed significantly. In 2026, at the 38th Regulatory Information Conference, this difference was noted by Dr. Rita Baranwal, former assistant secretary of nuclear energy under President Biden and now chief nuclear officer with Radiant Energy: “In my nearly 30-year career I have engaged with the NRC quite a bit. But this time it is different. They are so quick to respond and so thoroughly prepared and wanting to move forward together . . . And forgive me for using this word, because I am not sure it is allowable, but it feels like a partnership. . . . [It] feels like we have a team moving forward.”¹³⁴

There is also evidence of improvement in the timeline for license reviews. Southern Company is planning 210 MW of uprates by 2030; according to Thomas Kindred, a Southern Company engineer,

there has been a “fundamental change” in the level of engagement between the NRC and utilities.¹³⁵ The NRC held seven public workshops between 2024 and the spring of 2026 to discuss approaches to making the license process more efficient, new technical resources from the Sandia National Lab that allow more accurate modeling of reactors, and an improved application process that bundles elements to avoid duplicative analysis. Early data indicate that the new approach has yielded a “40 percent reduction in review schedules, 45 percent reduction in review effort, [and] 47 percent reduction in review duration,” with some 90 percent of reviews completed earlier than expected.¹³⁶ Kindred indicated that he expects its 210 MW of uprate applications to move approximately 36 months faster than earlier uprate applications.¹³⁷

Similarly, the NRC has been working efficiently on new reactor licensing. It completed the technical review of the construction permit for TerraPower’s Kemmerer reactor in 18 months—9 months ahead of schedule and 11 percent under budget.¹³⁸ Reviews of the Kairos Hermes 2 test reactor and NuScale’s Standard Design Approval were likewise completed ahead of schedule.

These are notable positive changes. But the agency is far from home free, given the challenges it is expected to face in coming years: if the NRC receives the anticipated increase in license applications, including numerous applications from companies with new reactor designs, it will need to staff up to match the increase or risk seeing this progress falter.

3. Lessons From NRC History

Lesson 1: Nuclear Growth Depends on Alignment of Early Project Support, Steady Market Conditions, and Consistent, Efficient Regulatory Oversight

For the nuclear sector to thrive, it must have market forces that support the economic case for nuclear, government support for early deployment, and a regulatory agency that can license plants in an efficient manner.

The 1960s saw early government investment develop into commercially successful nuclear technologies; as strong market demand emerged, there was a rapid increase in nuclear plant orders. But the regulatory oversight and market conditions started to falter in the 1970s, when the licensing path grew longer, the newly enacted National Environmental Policy Act created unanticipated delays, and—even before the TMI accident—officials imposed more demanding safety regulations (including some applied retroactively). Multiple factors added to the costs and delay to nuclear builds: changing market conditions, including reduced load growth, increases in labor costs, and financing challenges, emerged at this time, as did problems with the regulatory process, including delays in resolving technical issues and the contested hearings process.¹³⁹

The anticipated nuclear renaissance of the 2000s collapsed due to changes in market conditions (lower natural gas prices) and the impact of the Fukushima accident, even before the NRC's regulatory climate was fully tested.¹⁴⁰ But the two AP1000 reactors that were built also illustrated the unexpected hazards of well-intentioned regulatory innovation. Vogtle Units 3 and 4 were the first reactors to be licensed under Part 52's combined construction and operating license. Part 52 was a reform designed, in part, to facilitate construction, specifically by allowing new reactors to avoid the risk that the NRC would approve construction and then require changes to an already-built facility to qualify for its operating license. Part 52 is likely to be useful in some situations, but it was a poor fit for a new reactor design, given that the construction process revealed numerous small but necessary design changes (180 in total), each of which had to go through the NRC amendment process.¹⁴¹

Lesson 2: Public Confidence in the NRC and in the Safety of Nuclear Is Critical

Data on accidents and harmful air pollution show that nuclear power is far safer and cleaner than fossil-based power, especially coal, and on par with renewables.¹⁴² But when it comes to public concerns about safety, nuclear tops the list.¹⁴³ Even before the high-profile cases such as Three Mile Island, operational problems at Fermi 1, the first sodium-cooled reactor, raised alarm and spawned the erroneous claim that “we almost lost Detroit.” As with Three Mile Island, the success of the reactor's “defense in depth” approach to safety (in neither case was any serious quantity of radiation released) did not prevent public concern.

The nuclear industry and the NRC understand that safe deployment of nuclear is paramount. But the emergence of numerous nuclear start-up companies—a testament to the dynamism of the US economy and the case for nuclear today—heightens the importance of NRC oversight. In any new field, only

a few start-up companies will become commercially successful. Companies may find themselves facing the prospect of bankruptcy unless they can cobble together a demonstration project. When the alternative is bankruptcy, the risk calculus favors taking larger risks on a demonstration. Even if a reactor design possesses inherent safety features, low-consequence nuclear incidents like the one at Fermi 1 can still generate alarm and set the sector back. This puts a greater onus on the NRC to ensure these hazards are identified and avoided.

Lesson 3: Regulatory Consistency Is Essential

The NRC's history demonstrates the difficulties faced by a capital-intensive industry like nuclear when the rules change. For example, new Emergency Core Cooling Systems rules adopted in the 1970s led to closure of one plant and time-consuming redesigns at others. To reduce nuclear construction costs, the industry needs to build one type of reactor repeatedly. This can happen only with regulatory consistency.

For many federal agencies (such as the Environmental Protection Agency), this regulatory consistency seems impossible to achieve. Instead, agencies operate in radically different modes depending on which party occupies the White House. In recent years, the NRC has been less exposed to such swings, as it has benefited from a strong degree of bipartisan support and policy consistency. As the NRC moves forward, it must continue to build the consensus needed to maintain durable policy. This does not mean that some old rules should not be reevaluated. They should be, particularly if they were adopted when the technical understanding of risks was less well developed or when the NRC was trying to quell public distrust. But rule changes will be helpful only if they are durable, and that requires building a strong degree of political consensus.

Lesson 4: Rigorous Standards Must be Maintained While Enabling Nuclear

For much of its history, the NRC has had a contentious relationship with nuclear operators. Often driven by critical news stories, the NRC has enforced strict rules irrespective of whether those rules contributed significantly to safety. Recently, the relationship between the NRC and the industry appears to have improved. NRC leadership has stated that it is seeking to “enable” the nuclear industry through more efficient licensing. Companies seeking licenses have recognized positive changes. At the same time, efficiency cannot come at the expense of rigorous analysis of all safety-significant issues. NRC leadership has rightly emphasized the importance of maintaining and growing the expert staff capable of maintaining this level of rigor.

It is also important to avoid pressure to adhere to arbitrary timelines at the expense of the required analysis. Setting expectations for licensing timelines and for tracking of progress would be helpful. But the key to meeting timelines is providing staff with the resources to conduct the needed reviews on time. Indeed, experience at other agencies shows that where these resources are not provided, short timelines (like those set for certain NEPA analyses) can lead staff-strapped agencies simply to find ways around the timeline, such as delaying when the clock starts to run. These workarounds do not actually speed up the process.¹⁴⁴

Lesson 5: The NRC Must Remain Visibly Independent

The Atomic Energy Commission was unable to maintain public confidence as a safety regulator when it was also a promoter of nuclear technologies. Congress recognized this and separated these functions. More recently, Congress also appropriately recognized that independence should not prevent the NRC from acknowledging the benefits of nuclear power. DOE is again working on new reactor demonstrations,

and the NRC is collaborating on this process and intends to incorporate information derived from it in any subsequent review of a commercial license application. The AEC's history shows that both the appearance and the reality of independence are essential to maintaining the public's confidence in safety when reactors move from demonstration to commercialization. Indeed, the NRC's reputation as the gold standard in nuclear safety is not just important at home but is also a key selling point for the US nuclear industry when it engages overseas. Maintaining the NRC's reputation for independence and safety excellence is important to the long-term success of the industry.

Lesson 6: Moving Targets and Competing Constituencies Must Be Addressed

Adapting the NRC to license advanced reactors—a vital task—highlights two challenges, one persistent and the other relatively new. The persistent challenge is that the NRC's "target," that is, the goal of its activity, is constantly evolving in response to market conditions, technological progress, and political and social change. After the Three Mile Island accident, for example, elected leaders (and voters) wanted the NRC to emphasize safety at existing nuclear power plants and were prepared to accept that this might come at the expense of new licenses. During the last decade, however, much if not most of the pressure to reform the NRC has originated with a desire to expedite licensing. To be successful, NRC must reform in ways that allow for, and to some extent even foresee, future evolution in response to new circumstances.

The newer challenge is that the nuclear industry itself is becoming more complex—and its components do not all have the same priorities. For example, the commercial and policy interests of a utility operating one or more existing nuclear power plants are unlikely to be identical with the interests of a company trying to develop, license, and build an innovative reactor design. Likewise, firms with licensed designs may not have interests identical to those seeking licenses.

NEI's position on ALARA, which differentiates between existing and new reactors, illustrates one way to accommodate different interests. Indeed, we agree that it may make sense to maintain the standards now in place for existing reactors while reforming ALARA for new reactors in order to avoid imposing high-cost measures designed to further lower exposure at nuclear plants when levels are already so low that, as the NRC has acknowledged, "it is generally impossible" to find evidence of any harm to public health.¹⁴⁵

4. Recommendations

The NRC is engaged in a set of reform initiatives broader and deeper than any in the past. Many of these are important and some long overdue. This does not change the fact that managing them all simultaneously is a significant task. These new reforms must both increase the NRC's readiness to license the new fleet of advanced reactors commensurate with President Trump's energy dominance goals, and take care not to introduce novel costs, safety concerns, uncertainties, or risks of delays to the reactor approval process.

To strengthen the NRC's ability to support the deployment of new reactors while maintaining public trust and safety, Congress and the administration should consider the actions presented below in addition to the reforms currently underway.

1. Reduce the Direct Cost of Licensing by Eliminating Application Fees and Funding the NRC through General Appropriations

Nuclear energy developers provide a technology crucial to the US economy and to energy and national security. Their application review costs should not be more burdensome than those borne by other energy sources. The nuclear industry today looks very different from the peak deployment era of the 1970s, when large utilities were the primary customer for reactors, and large companies were the primary developers of reactor technology. Today, smaller utilities and industrial customers represent viable customer markets, while new reactor developers are predominantly small start-ups with limited capital. Although licensing fees can be useful tools in weeding out frivolous or premature applications, excessive fees for license applicants are a needless obstacle for reactor developers.

Congress gave independent agencies the latitude to assess user fees through the 1952 Independent Offices Appropriations Act.¹⁴⁶ Then, in 1990, to contend with the expanding national deficit, Congress formally directed the NRC to collect at least 90 percent of its annual budget from fees collected from anyone who received NRC services, including licensees.¹⁴⁷ In the ADVANCE Act, Congress exempted certain licensing actions from fee recovery. But Congress should go further.

To reflect the new nuclear landscape and to encourage nuclear innovation, Congress should move toward treating the NRC the way it treats most other agencies, should work with the nuclear industry in the same way it works with other energy industries, and should not require the NRC to recover such a high share of its licensing costs from reactor developers. This may be challenging politically in an era when deficit reduction remains necessary but is important to facilitating licensing of innovative new reactors. The Congress should explore options to reduce NRC fees further and, in parallel, to reduce the mandated share of NRC's budget from fees.

Concurrently, the NRC should designate personnel in the new Office of Advanced Reactors to develop a set of consistent criteria for structured review of reactor applications. By clarifying guidance on which applications will receive priority review, NRC can discourage or manage applications that do not meet basic standards or are not complete. Congress should ensure that sufficient off-fee resources are available to the NRC for this purpose.

2. Improve the Efficiency of the Licensing Process

a. Re-enable the NRC to conduct early stakeholder engagement on rulemakings.

Historically, the NRC has circulated and received stakeholder feedback on draft rule text prior to issuing formal regulatory proposals. The practice has been valuable to the NRC, the regulated community, and other stakeholders. President Trump's EO 14215 placed the NRC and other independent agencies under the requirements of a Clinton-era executive order giving the White House's Office of Information and Regulatory Affairs review authority over agency rulemakings.¹⁴⁸ As a result, the NRC can no longer make draft proposal language public and is unable to obtain the same detailed feedback from industry and community stakeholders in advance of issuing proposed rules. The public (which includes citizens as well as companies and nongovernmental organizations) now has just 30 days after proposal to comment—a short window for feedback on complex rules that may greatly affect developers, end users, and others.

The NRC should be allowed to resume the iterative feedback permitted by its traditional system of transparently sharing draft text, hearing feedback, and making changes before issuing a formal proposed rule.¹⁴⁹ This system avoided the cumbersome, inefficient process of re-proposing rules after receiving substantial feedback. Early feedback and engagement remain key elements of effective and efficient rulemaking and do not preclude review by the Office of Information and Regulatory Affairs. The administration should reconsider the requirements of EO 14215 and re-enable the NRC to follow historic precedent and share draft regulatory text with the public prior to issuing regulatory proposals.

b. Encourage the use of environmental assessments, categorical exclusions, and the Generic Environmental Impact Statement.

The NRC is in the process of revising its regulations implementing NEPA, as required by the ADVANCE Act.¹⁵⁰ The ADVANCE Act directed the NRC to expand its “use of categorical exclusions, environmental assessments, and generic environmental impact statements” when licensing nuclear reactors.¹⁵¹ Importantly, in passing this provision, Congress established that licensing a new nuclear plant does not automatically require an EIS. The NRC's initial actions to implement the law are encouraging and should help ensure that the new regulations provide streamlined NEPA review for new reactors.

As it streamlines NEPA review, the NRC should continue to provide strong public engagement through its extensive review of reactor safety under the Atomic Energy Act. NEPA is a procedural statute requiring disclosure but imposing no substantive rules. It is most useful in situations where agencies have broad discretion and environmental protection is not required by a substantive statute. For nuclear power, the Atomic Energy Act appropriately requires that reactors meet rigorous substantive standards: the NRC may issue a reactor license only if it determines that the reactor will protect “the health and safety of the public.”¹⁵² It is this substantive review that ensures reactor safety, and strengthening public engagement in that process can help build and maintain public confidence in the safety of nuclear power.

c. Eliminate mandatory hearings.

Until 2024, the NRC required all applications to go through an in-person, uncontested hearing on safety and environmental issues. This requirement is a holdover from the 1957 Atomic Energy Act, and it serves no useful purpose today; it does not facilitate public participation and needlessly adds time and cost to the application. In 2024, the NRC switched to a paper-only hearing process, in which written materials substituted for oral presentations.¹⁵³ This is a significant improvement and is expected to cut the duration of mandatory hearings in half. But as former NRC commissioners recently pointed

out in a letter to Congress, the hearing requirement still creates unnecessary complexity.¹⁵⁴ Congress should amend the law to eliminate this requirement, as proposed in H.R. 5569, the Efficient Nuclear Licensing Hearings Act, and allow license applications to be conducted through a transparent license review process.

d. Focus the Advisory Committee on Reactor Safeguards on novel and high-risk issues.

EO 14300 directs the NRC to reduce ACRS's obligations related to reactor review. This sensible directive should be implemented to ensure that ACRS continues to focus on new and high-risk safety topics, as it did with its review of reduced emergency planning zones for advanced reactors and its research into the challenges of pebble bed reactors.¹⁵⁵ Congress should also consider amending the Atomic Energy Act to make it easier to focus ACRS reviews on the most important topics as is proposed in H.R. ___, Nuclear Advisory Committee Reform Act (discussion draft).¹⁵⁶ The ACRS should not need to review nth-of-a-kind reactor license applications, updates without significant safety implications, or events without off-site impacts to public health.¹⁵⁷ The committee's panels of experts will continue to play an important role in evaluating the safety of new reactors, and its work should be appropriately focused on these novel questions.

3. Empower the NRC to Execute Its Mission Efficiently

a. Ensure sufficient staff capacity in key offices.

The reorganization effort underway at the NRC could have little impact if the agency lacks sufficient staff with the necessary expertise in the right offices. The NRC reportedly lost over 10 percent of its workforce due to buyouts, resignations, and firings during the first year of President Trump's term.¹⁵⁸ Given the expectation of a sharp increase in license applications, the NRC needs a larger staff of experts, not a smaller one. At the 2026 NRC Regulatory Information Conference, several commissioners indicated the need for more staff, as well as the challenges of attracting qualified candidates when the private sector is also recruiting for similar positions. Without adequate expert staff, the NRC may be unable to ensure that reactor application reviews are both efficient and thorough. Worse, pressuring NRC staff to approve applications absent a comprehensive review could undermine confidence and raise safety risks.

The NRC requires smart, dedicated, and efficient staff if it is to deliver on the scaled licensing envisioned by NEIMA, the ADVANCE Act, and EO 14300. While reactor demonstrations can continue with oversight by DOE, the Idaho National Laboratory, and the Pentagon, these entities lack the NRC's licensing and regulatory expertise, and the path to commercial markets must still run through the NRC.

Congress should evaluate NRC staffing levels and consider raising the salary caps for NRC commissioners, leadership, and staff to attract and retain the qualified nuclear regulatory experts needed to conduct efficient, effective license reviews. The NRC Staff Pay Alignment Act, a discussion draft, would authorize salary increases for in-demand career employees.¹⁵⁹ In the current nuclear boom, current and prospective NRC staff face increasingly attractive financial incentives to work for private industry. Their choice of public service should be financially rewarded commensurate with the value the federal government places on expanding nuclear energy.

While congressional action is the more durable approach, the Office of Personnel Management can and should separately consider raising the salary caps of NRC employees.

b. Support development of a strong NRC workforce pipeline.

Over the medium to long term, the NRC is likely to face hiring and retention pressures that may result in a shortage of necessary expertise. Congress can help address this issue by supporting near-term regulatory workforce development. It should increase the scale and scope of the NRC's internship and apprenticeship programs, and consider directing the establishment of new education and training programs for future regulators. Such programs can support the nation's collegiate nuclear engineering programs, which have seen a decline in enrollments over the past decade.¹⁶⁰ To the extent that the NRC is tasked to lead or participate in these efforts, it should not be required to recover fees to support them.

4. Foster Ongoing Agency Excellence

a. Establish a stakeholder advisory committee.

As part of its reorganization process, the NRC should consider establishing a stakeholder advisory body. While its relationship with stakeholders appears to be improving, the NRC has frequently had a challenging relationship with both industry and critics of nuclear energy. A stakeholder advisory body would enable consistent dialogue and promote improved communication between the regulator, nuclear utilities, reactor developers, nuclear subcontractors, and other industry stakeholders. Through regular engagement, the body could help surface, and potentially resolve, disagreements between these groups, with the goal of ensuring NRC processes balance the interests of the entire regulated community and its supporters. This ability to engage with stakeholders could be particularly valuable if NRC has tight license deadlines and short windows for public comment.

b. Assess the value of the ALARA standard.

The NRC recently proposed amending standards for low-level radiation protection.¹⁶¹ Whether low levels of radiation exposure cause harm continues to be the subject of dispute among experts and the NRC has smartly avoided a proposal that would attempt to resolve that dispute. Instead, the NRC has focused on reforms that seek to ensure the reasonableness of measures required to further reduce already low levels of exposure. Data from the Environmental Protection Agency show that nuclear power plants are responsible for less than 0.1 percent of the radiation that the average American is exposed to;¹⁶² this finding highlights the importance of ensuring that costs of additional measures at nuclear power plants are reasonable. The NRC's proposal seeks to achieve this goal by adopting a "graded approach to managing radiation exposure below regulatory limits."¹⁶³ While the approach appears sound, the NRC should consider whether the proposal would achieve benefits large enough to justify the change. The NRC projects that the changes would achieve savings to the industry of "approximately \$9.53 million/year at a 7 percent discount rate," a very low figure given the size of the nuclear sector.¹⁶⁴ If this estimate accurately reflects the magnitude of the benefits, the NRC may conclude that finalizing the proposal is not warranted, especially given that the changes may have real, if hard to quantify, costs to public confidence in reactor safety.

c. Model cultural change from the top.

Organizational culture change at the NRC starts at the top with senior leadership. As Chairman Ho Nieh, tapped by President Donald Trump to lead the agency, said at the 2026 NRC Regulatory Information Conference, leaders must set the standard for the behavior they expect from their staff. He has been clear and public in what should stay the same: keeping safety the NRC's top priority, maintaining its independence, and recognizing that the staff are the agency's greatest asset, all while enabling the use of nuclear energy.¹⁶⁵

Nieh and his colleagues on the commission must continue to be clear, transparent, and inspiring in their leadership of the NRC. They must finalize their new leadership and management model, find ways to operationalize it, and make it tangible for staff in this period of significant agency growth and change. The overly proceduralist culture that characterized the NRC in the past is inadequate to the task of building America's nuclear energy future and to achieving broader US economic, technological, and geopolitical goals.

About the Authors

Ben Longstreth is a senior advisor at Energy Innovation Reform Project. Previously, he served as a senior attorney with the Natural Resource Defense Council, lead for Carbon Capture and Storage at the Clean Air Task Force and as a trial attorney with the U.S. Department of Justice.

Paul Saunders is president and CEO of the Center for the National Interest, publisher of The National Interest, and a senior advisor at Energy Innovation Reform Project. He was a State Department senior advisor during the George W. Bush administration, where he worked on energy and climate change, among other issues.

Samuel Thernstrom is the founder and president of Energy Innovation Reform Project and a senior fellow at the Center for the National Interest.

Jackie Toth is the owner of New Hill Consulting LLC, which provides government relations, strategic communications, and organizational development support to for-profit and nonprofit clients in the energy space. A former federal energy policy journalist, Toth reported on energy and environmental laws and regulations, particularly nuclear energy policy and innovation. She has worked on nuclear, energy, tax, and manufacturing policy at DC-area think tanks and has testified to Congress on the importance of nuclear energy for national and energy security.

Endnotes

- 1 J. Samuel Walker and Thomas R. Wellock, A Short History of Nuclear Regulation, 1946–2009 (Nuclear Regulatory Commission, 2010), 1–4, <https://www.nrc.gov/docs/ml1029/ml102980443.pdf>.
- 2 Eric W. Boyle and Thomas R. Wellock, Atomic Fission: The Breakup of the Atomic Energy Commission and the Energy Reorganization Act of 1974 (Nuclear Regulatory Commission, n.d.), 10, <https://www.nrc.gov/docs/ML2504/ML25044A364.pdf>.
- 3 Walker and Wellock, Short History, 2010, 8.
- 4 J. Samuel Walker and Thomas R. Wellock, A Short History of Nuclear Regulation, 1946–2024 (Nuclear Regulatory Commission, 2024), 10, <https://www.nrc.gov/docs/ML2421/ML2421A051.pdf>.
- 5 Walker and Wellock, Short History, 2024.
- 6 Nuclear Regulatory Commission, “Fermi–Unit 1,” <https://www.nrc.gov/info-finder/decommissioning/power-reactor/enrico-fermi-atomic-power-plant-unit-1>.
- 7 John G. Fuller, We Almost Lost Detroit (Reader’s Digest Press, 1975).
- 8 Earl M. Page, “We Did Not Almost Lose Detroit,” Detroit Edison, May 1976, <https://michiganintheworld.history.lsa.umich.edu/environmentalism/files/original/795ede3fcb46122a4ee7554d7a42c2c3.pdf>.
- 9 Walker and Wellock, Short History, 2024, 22–23.
- 10 Walker and Wellock, Short History, 2010, 25, 28.
- 11 Linda Cohen, “Innovation and Atomic Energy: Nuclear Power Regulation, 1966–Present,” Law and Contemporary Problems 43, no. 1 (1979): 71, <https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=3570&context=lcp>.
- 12 Will Davis, “Nuclear Plant Construction Delay and Cost 5,” Nuclear Newswire, January 17, 2019, <https://www.ans.org/news/article-2100/nuclear-plant-construction-delay-and-cost-5/>.
- 13 Walker and Wellock, Short History, 2010, 18.
- 14 This possibility was dubbed the “China syndrome.” Walker and Wellock, Short History, 2024, 6, 24.
- 15 Cohen, “Innovation,” 84.
- 16 Walker and Wellock, Short History, 2024, 18, 23–24, 37–42.
- 17 Thomas R. Wellock, “Social Scientists in an Adversarial Environment: The Nuclear Regulatory Commission and Organizational Factors Research,” Nuclear Technology (2021), <https://www.nrc.gov/docs/ML2117/ML21176A134.pdf>.
- 18 Walker and Wellock, Short History, 2010, 58, 60.
- 19 The commission was led by Dartmouth College President John Kemeny. See John G. Kemeny et al., Report of the President’s Commission on the Accident at Three Mile Island (1979), 20–22, <https://www.osti.gov/servlets/purl/6986994>; Jon F. Elliot, “The Kemeny Report on the Accident at Three Mile Island,” Ecology Law Quarterly 8, no. 4 (March 1980): 810, <https://www.osti.gov/servlets/purl/5082863>.
- 20 Walker and Wellock, Short History, 2024, 42; Nuclear Regulatory Commission, “Backgrounder on Resident Inspector Program,” December 2022, <https://www.nrc.gov/reading-rm/doc-collections/fact-sheets/resident-inspectors-bg>.

REGULATING CHANGE AND CHANGING REGULATION

- 21 Walker and Wellock, Short History, 2024, 48.
- 22 Nuclear Regulatory Commission, A Survey by Senior NRC Management to Obtain Viewpoints on the Safety Impact of Regulatory Activities from Representative Utilities Operating and Constructing Nuclear Power Plants (Nuclear Regulatory Commission, Office of Inspection and Enforcement, 1981), <https://babel.hathitrust.org/cgi/pt?id=mdp.39015040729942&seq=5&q1=pac+2-3>.
- 23 Walker and Wellock, Short History, 2010, 65.
- 24 Congressional Budget Office, “Delays in Nuclear Reactor Licensing and Construction: The Possibilities for Reform,” February 1979, <https://www.cbo.gov/sites/default/files/96th-congress-1979-1980/reports/79doc643.pdf>.
- 25 Walker and Wellock, Short History, 2010, 59–60.
- 26 NUREG-1350, Vol. 35, “Information Digest,” Section 6, Appendices.
- 27 Wellock, “Social Scientists,” 4.
- 28 Walker and Wellock, Short History, 2010, 75–76.
- 29 Towers Perrin, Nuclear Regulatory Review Study: Final Report (1994), 1, <https://www.nrc.gov/docs/ML2007/ML20076K964.pdf>.
- 30 Nuclear Regulatory Commission, “Briefing by Nuclear Energy Institute (NEI) on Their Nuclear Regulatory Review Study—Public Meeting,” December 21, 1994, 14, 18, <https://www.nrc.gov/docs/ML1516/ML15162A980.pdf>. Towers Perrin merged with Watson Wyatt in 2010 to form Towers Watson & Co.; see Towers Watson & Co., “Towers Perrin and Watson Wyatt Complete Merger to Form Towers Watson,” January 3, 2010, <https://www.prnewswire.com/news-releases/towers-perrin-and-watson-wyatt-complete-merger-to-form-towers-watson-80538962.html>. Risk and insurance firm Willis Group acquired this company in 2016 to create Willis Towers Watson; see WTW, “Willis Towers Watson Merger Successfully Completed,” January 5, 2016, <https://investors.wtwco.com/news-releases/news-release-details/willis-towers-watson-merger-successfully-completed>. The company also produced many of the NRC Safety Culture and Climate Surveys for the Office of Inspector General. See Nuclear Regulatory Commission, Office of Inspector General, “Evaluation Report 2009,” NRC Safety Culture and Climate Survey OIG-09-A-18, September 30, 2009, https://www.govinfo.gov/content/pkg/GOVPUB-Y3_N88-PURL-gpo59836/pdf/GOVPUB-Y3_N88-PURL-gpo59836.pdf; Nuclear Regulatory Commission, Office of Inspector General, “Evaluation Report 2012,” NRC Safety Culture and Climate Survey OIG-13-A-15, March 28, 2013, <https://www.oversight.gov/sites/default/files/documents/reports/2021-11/ML13087A326.pdf>; Nuclear Regulatory Commission, Office of Inspector General, “Results in Brief,” OIG-16-A-13, April 15, 2016, <https://www.oversight.gov/sites/default/files/documents/reports/2017-08/ML16106A012.pdf>.
- 31 Towers Perrin, Nuclear Regulatory Review Study, 2.
- 32 Towers Perrin, Nuclear Regulatory Review Study, 3.
- 33 Towers Perrin, Nuclear Regulatory Review Study, 4.
- 34 Nuclear Regulatory Commission, “Performance-Based Inspection Guidance and the Distinction Between Inspecting for Performance and Inspecting against a Performance-Based Rule – Staff Response to Staff Requirements Memorandum Dated March 17, 1997,” SECY-97-231, memorandum, October 8, 1997, 2, <https://www.nrc.gov/docs/ML9929/ML992940011.pdf>.
- 35 See, for example, Nuclear Regulatory Commission, “Results of the Staff’s Evaluation of Ongoing Feedback from Licensees on the Impact of NRC’s Activities on Licensees’ Operations,” SECY-97-282, memorandum, December 3, 1997, <https://www.nrc.gov/docs/ML9929/ML992950111.pdf>; Nuclear Regulatory Commission, “Regulatory Impact Summary,” <https://www.nrc.gov/docs/ML0605/ML060590233.pdf>. Annual reports on this feedback are available on the NRC’s website.
- 36 Walker and Wellock, Short History, 2010, 71.
- 37 Nuclear Regulatory Commission, Reactor Safety Study: An Assessment of Accident Risks in U.S. Commercial Nuclear Power Plants (1975), <https://www.nrc.gov/docs/ML1533/ML15334A199.pdf>; General Accounting Office, “Probabilistic Risk Assessment: An Emerging Aid to Nuclear Power Plant Safety Regulation,” RCED-85-11, June 19, 1985, <https://www.gao.gov/assets/rced-85-11.pdf>.

REGULATING CHANGE AND CHANGING REGULATION

- 38 General Accounting Office, “Probabilistic Risk Assessment.”
- 39 J. P. Smith, “‘75 Report on Reactor Safety Is Called Unreliable by NRC,” Washington Post, January 19, 1979, <https://www.washingtonpost.com/archive/politics/1979/01/20/75-report-on-reactor-safety-is-called-unreliable-by-nrc/498049c0-b087-4840-993f-dfe00c32eb42/>.
- 40 Eva Frederick, “Predicting Three Mile Island,” MIT Technology Review, August 22, 2024, <https://www.technologyreview.com/2019/04/24/135687/predicting-three-mile-island/>.
- 41 Nuclear Regulatory Commission, “Regulatory Guide 1.160: Monitoring the Effectiveness of Maintenance at Nuclear Power Plants,” May 2012, 5, <https://www.nrc.gov/docs/ml1136/ml113610098.pdf>; Nuclear Regulatory Commission, Office of Inspector General, “Audit Report: NRC Needs Comprehensive Plan to Resolve Regulatory Issues,” OIG/97A-01, August 21, 1997, 5, <https://www.nrc.gov/docs/ML2021/ML20210Q746.pdf>; Nuclear Regulatory Commission, “Use of Probabilistic Risk Assessment Methods in Nuclear Regulatory Activities: Final Policy Statement,” Federal Register 60, no. 158 (August 16, 1995): 42622, <https://www.nrc.gov/reading-rm/doc-collections/commission/policy/60fr42622.pdf>.
- 42 Nuclear Regulatory Commission, Strategic Plan: Fiscal Year 1977-2002 6, <https://www.nrc.gov/docs/ML2020/ML2020J270.pdf>.

National Research Council, Nuclear Power: Technical and Institutional Options for the Future (National Academies Press, 1992), 6, <https://www.nationalacademies.org/publications/1601>.
- 43 The controversy is described in Eric Pooley, “Nuclear Warriors,” Time, March 4, 1996, <https://time.com/archive/6728664/nuclear-warriors/>.
- 44 Nuclear Regulatory Commission, Office of Inspector General, “Audit Report,” 8.
- 45 Nuclear Regulatory Commission, Office of Inspector General, “Audit Report,” 6.
- 46 Nuclear Regulatory Commission, Office of Inspector General, “Audit Report,” 5.
- 47 Thomas Wellock, “Near Death: The Birth of the ROP,” Inspector Newsletter, January 2020, 1, <https://www.nrc.gov/docs/ML2329/ML23298A128.pdf>.
- 48 General Accounting Office, “Nuclear Regulation: Better Oversight Needed to Ensure Accurate Cost Estimates of Decommissioning Nuclear Power Plants,” RCED-97-145, May 1997, <https://www.gao.gov/assets/rced-97-145.pdf>.
- 49 Joe Colvin, testimony before the Senate Environment and Public Works Committee Subcommittee on Clean Air, Wetlands, Private Property and Nuclear Safety, July 30, 1998, <https://www.epw.senate.gov/105th/col730a.htm>.
- 50 Walker and Wellock, Short History, 2024, 60–61; Wellock, “Near Death.”
- 51 Walker and Wellock, Short History, 2024, 60–61; Wellock, “Near Death.”
- 52 Nuclear Regulatory Commission, “Interim Suspension of the Systematic Assessment of Licensee Performance (SALP) Program,” October 2, 1998, <https://www.nrc.gov/reading-rm/doc-collections/gen-comm/admin-letters/1998/al98007>; Nuclear Regulatory Commission, “Staff Requirements – SECY-98-144 – White Paper on Risk-Informed and Performance-Based Regulation,” memorandum, March 1, 1999, <https://www.nrc.gov/reading-rm/doc-collections/commission/srm/1998/1998-144srm.pdf>.
- 53 Nuclear Regulatory Commission, “Reactor Oversight Process,” NUREG-1649, Revision 5, February 2014, 1, <https://www.nrc.gov/docs/ML1405/ML14052A306.pdf>; Wellock, “Near Death.”
- 54 Dave Lochbaum, “Reactor Oversight Process,” The Equation blog, Union of Concerned Scientists, September 27, 2016, <https://blog.ucs.org/dlochbaum/reactor-oversight-process/>.
- 55 Tim Riti and Jim Slider, “The 25th Anniversary of the ROP and How Nuclear Has Changed,” NEI blog, April 23, 2024, <https://www.nei.org/news/2024/rop-anniversary-and-how-nuclear-has-changed>.
- 56 National Research Council, Nuclear Power, 3.
- 57 NEI, “U.S. Nuclear Industry Capacity Factors,” December 2025, <https://www.nei.org/resources/statistics/us-nuclear-industry-capacity-factors>.

REGULATING CHANGE AND CHANGING REGULATION

- 58 Walker and Wellock, Short History, 2010, 94.
- 59 CNN, “Transcript of Bush’s Energy Speech,” May 17, 2001, <https://www.cnn.com/2001/ALLPOLITICS/05/17/bush.transcript/>.
- 60 Before its termination in 2009, GNEP came to focus primarily on closing the nuclear fuel cycle domestically and through global partnerships. See The White House: President George W. Bush, “Advanced Energy Initiative: President’s Letter,” February 20, 2006, <https://georgewbush-whitehouse.archives.gov/stateoftheunion/2006/energy/index.html>; Energy Department, “Notice of Cancellation of the Global Nuclear Energy Partnership (GNEP) Programmatic Environmental Impact Statement (PEIS),” Federal Register 74, no. 123 (June 29, 2009): 31043–45, <https://www.federalregister.gov/documents/2009/06/29/E9-15328/notice-of-cancellation-of-the-global-nuclear-energy-partnership-gnep-programmatic-environmental>.
- 61 Nuclear Regulatory Commission, “Reducing Corporate Support and Improving the Efficiency of the Commission’s Internal Processes,” report for the House and Senate Committees on Appropriations, April 30, 2015, 1, <https://www.nrc.gov/docs/ML1510/ML15100A377.pdf>.
- 62 <https://bestplacestowork.org/rankings/detail/?c=NU00>.
- 63 Nuclear Regulatory Commission, “Next Generation Nuclear Plant Licensing Strategy: A Report to Congress,” August 2008, 1, <https://www.nrc.gov/docs/ML0822/ML082290017.pdf>.
- 64 South Carolina Electric & Gas Company (SCE&G) and Southern Nuclear Operating Company (SNC) submitted their COL applications on March 27 and March 28, 2008, respectively.
- 65 Walker and Wellock, Short History, 2024, 74.
- 66 Molly Samuel, “How the Dream of America’s ‘Nuclear Renaissance’ Fizzled,” NPR, August 6, 2017, <https://www.kcur.org/2017-08-06/how-the-dream-of-americas-nuclear-renaissance-fizzled>.
- 67 For the added aircraft impact assessment (10 CFR 50.150), see Nuclear Regulatory Commission, “Part 50—Domestic Licensing of Production and Utilization Facilities,” <https://www.nrc.gov/reading-rm/doc-collections/cfr/part050/part050-0150>; Walker and Wellock, Short History, 2024, 66–67.
- 68 Nuclear Regulatory Commission, “Reducing Corporate Support,” 3.
- 69 Nuclear Regulatory Commission, “Achieving Exemplary Nuclear Regulation in the 21st Century: Report on Project Aim 2020,” 5, <https://www.nrc.gov/docs/ML1502/ML15023A579.pdf>.
- 70 Nuclear Regulatory Commission, “Project Aim 2020: Appendix A—Recommendations,” 3, <https://www.nrc.gov/docs/ML1502/ML15023A577.pdf>.
- 71 Nuclear Regulatory Commission, “Staff Requirements – SECY-15-0015 – Project AIM 2020 Report and Recommendations,” memorandum, June 8, 2015, <https://www.nrc.gov/docs/ML1515/ML15159A234.pdf>.
- 72 Study Team of the National Academy of Public Administration, “Feedback Report on the U.S. Nuclear Regulatory Commission’s Project Aim 2020 Report,” March 2015, 7, https://s3.us-west-2.amazonaws.com/napa-2021/studies/evaluating-project-aim-2020-preparing-to-transform-the-us-nuclear-regulator/NRC_Feedback_Report.pdf.
- 73 Study Team of the National Academy of Public Administration, “Feedback Report.
- 74 National Academy of Sciences, Nuclear Power: Technical and Institutional Options for the Future, 5-6, <https://www.nationalacademies.org/publications/1601>.
- 75 C-SPAN, “Nuclear Energy Regulation,” video, April 21, 2016, <https://www.c-span.org/program/senate-committee/nuclear-energy-regulation/439879>; Congress.gov, “S.2795 – 114th Congress (2015–2016): Nuclear Energy Innovation and Modernization Act,” June 23, 2016,” <https://www.congress.gov/bill/114th-congress/senate-bill/2795>.
- 76 C-SPAN, “Nuclear Energy Regulation,” 1:11:33–1:12:15.
- 77 MIT Energy Initiative, “The Future of Nuclear Energy in a Carbon-Constrained World: An Interdisciplinary MIT Study,” 2018, 129–132, <https://energy.mit.edu/wp-content/uploads/2018/09/The-Future-of-Nuclear-Energy-in-a-Carbon-Constrained-World.pdf>.

REGULATING CHANGE AND CHANGING REGULATION

- 78 Robert Bryce, “After 48 Years, Democrats Endorse Nuclear Energy in Platform,” *Forbes*, August 23, 2020, <https://www.forbes.com/sites/robertbryce/2020/08/23/after-48-years-democrats-endorse-nuclear-energy-in-platform/>.
- 79 Congress.gov, “S.97 – 115th Congress (2017–2018): Nuclear Energy Innovation Capabilities Act of 2017,” September 28, 2018, <https://www.congress.gov/bill/115th-congress/senate-bill/97/>.
- 80 Congress.gov, “S.512 – 115th Congress (2017–2018): Nuclear Energy Innovation and Modernization Act,” January 14, 2019, <https://www.congress.gov/bill/115th-congress/senate-bill/512/>.
- 81 Congress.gov, “H.R.133 – 116th Congress (2019–2020): Consolidated Appropriations Act, 2021,” December 27, 2020, <https://www.congress.gov/bill/116th-congress/house-bill/133/>.
- 82 Nuclear Energy Innovation and Modernization Act, S. 512, 115th Congress (enrolled bill, December 27, 2018), <https://www.congress.gov/115/bills/s512/BILLS-115s512enr.pdf>.
- 83 Idaho National Laboratory, “Licensing Modernization Project for Advanced Reactor Technologies: FY 2018 Project Status Report,” INL/EXT-18-46151, September 2018, v, <https://www.osti.gov/servlets/purl/1471714>.
- 84 NEI, “Risk-Informed Performance-Based Technology: Inclusive Guidance for Non-Light Water Reactor Licensing Basis Development,” Report Revision 1, Technical Report 18-04, August 2019, <https://www.nrc.gov/docs/ML1924/ML19241A472.pdf>.
- 85 Nuclear Regulatory Commission, “Risk-Informed and Performance-Based Guidance for Non-LWR Licensing Basis Development,” <https://www.nrc.gov/reactors/new-reactors/advanced/modernizing/guidance/industry-led-licensing-modernization-project>; Nuclear Regulatory Commission, “NEI 18-04 Rev 1 Risk-Informed Performance-Based Technology Guidance for Non-Light Water Reactors,” August 29, 2019, <https://www.nrc.gov/docs/ML1924/ML19241A336.html>; Nuclear Regulatory Commission, “Guidance for a Technology-Inclusive, Risk-Informed, and Performance-Based Methodology to Inform the Licensing Basis and Content of Applications for Licenses, Certifications, and Approvals for Non-Light-Water Reactors,” Regulatory Guide 1.233, Revision 0, June 2020, <https://www.nrc.gov/docs/ml2009/ml20091l698.pdf>.
- 86 Nuclear Regulatory Commission, “Policy Issue (Notation Vote),” SECY-20-0032, April 13, 2020, <https://www.nrc.gov/docs/ML1934/ML19340A056.pdf>.
- 87 Marcus Nichol, letter to John Tappert, October 21, 2020, 4, <https://www.nrc.gov/docs/ML2029/ML20296A398.pdf>.
- 88 Nicholas McMurray, “New Nuclear Energy Needs New Licensing Process,” ClearPath, March 16, 2023, <https://clearpath.org/our-take/new-nuclear-energy-needs-new-licensing-process/>.
- 89 Brian Martucci, “Industry Groups, Utilities Encourage More ‘Efficient’ Part 53 Changes,” *Utility Dive*, March 18, 2025, <https://www.utilitydive.com/news/industry-groups-utilities-part-53-comments-nuclear-energy/742805/>.
- 90 Nuclear Regulatory Commission, “Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors,” *Federal Register* 91, no. 60 (March 30, 2026), <https://www.federalregister.gov/documents/2026/03/30/2026-06048/risk-informed-technology-inclusive-regulatory-framework-for-advanced-reactors>; Nuclear Regulatory Commission, “Part 53 – Risk-Informed, Technology-Inclusive Regulatory Framework for Commercial Nuclear Plants: Safely Enabling Flexibility, Efficiency, and Innovation,” last updated April 29, 2026, <https://www.nrc.gov/reactors/new-reactors/advanced/modernizing/rulemaking/part-53>.
- 91 Jeffrey S. Merrifield et al., “NRC Part 53 Final Rule Offers More Flexibility for Different Reactor Technologies,” *Pillsbury*, April 13, 2026, <https://www.pillsburylaw.com/en/news-and-insights/nuclear-regulatory-commission-part-53-final-rule-flexibility-different-reactor-technologies.html>; Tison A. Campbell and Jasper G. Noble, “Navigating Nuclear: What Part 53 Previews for Future Rulemakings,” *K&L Gates*, April 7, 2026, <https://www.klgates.com/Navigating-Nuclear-What-Part-53-Previews-for-Future-Rulemakings-4-7-2026>.
- 92 Nuclear Regulatory Commission, “ACRS History,” last updated July 7, 2020, <https://www.nrc.gov/about-nrc/regulatory/advisory/acrs/history>.
- 93 Nuclear Innovation Alliance, “Improving the Effectiveness and Efficiency of the Advisory Committee on Reactor Safeguards,” March 2023, <https://nuclearinnovationalliance.org/sites/default/files/2023-03/NIA%20Final%20Report%20on%20ACRS%20-%20March%202023.pdf>; Ted Nordhaus, testimony before House Committee on Energy and Commerce Subcommittee on Energy, Climate, and Grid Security at hearing entitled “American Nuclear Energy Expansion: Updating Policies for Efficient, Predictable Licensing and Deployment,” July 18, 2023, 12, https://d1dth6e84htgma.cloudfront.net/07_18_23_Testimony_Nordhaus_9258850e5a.pdf.

REGULATING CHANGE AND CHANGING REGULATION

- 94 Nuclear Innovation Alliance, “Improving the Effectiveness,” 7, 11.
- 95 Nuclear Regulatory Commission, “Policy Issue (Notation Vote),” SECY-25-0045, June 5, 2025, <https://www.nrc.gov/docs/ML2504/ML25042A278.pdf>.
- 96 Nuclear Regulatory Commission, “Fee Schedules; Fee Recovery for Fiscal Year 2025,” Federal Register 90, no. 119 (June 24, 2025): 26,730-26,765, <https://www.federalregister.gov/documents/2025/06/24/2025-11544/fee-schedules-fee-recovery-for-fiscal-year-2025>.
- 97 Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024, Pub. L. No. 118-67, 138 Stat. 1475.
- 98 Nuclear Regulatory Commission, “Staff Requirements – SECY-24-0083 – Mission Statement Update Options Pursuant to Subsection 501(a) of the Advance Act of 2024,” memorandum, January 24, 2025, <https://www.nrc.gov/docs/ML2502/ML25024A040.pdf>.
- 99 Ethan Howland, “25 SMR License Applications Expected by 2029, Plus Six Other Takeaways from FERC, NRC Joint Meeting,” Utility Dive, January 26, 2024, <https://www.utilitydive.com/news/ferc-nrc-joint-meeting-smr-nuclear-black-start/705708/>.
- 100 Net Zero Insights, “Nuclear Fission Investment Surges in 2025,” October 28, 2025, <https://netzeroinsights.com/resources/nuclear-fission-investment-surges-2025/#:~:text=While%20smaller%20than%20reactor%20development,Nvidia%2C%20Amazon%2C%20and%20Hitachi>.
- 101 Ivan Penn, Trump Administration Backs Plan for New Nuclear Plants, New York Times, October 28, 2025, <https://www.nytimes.com/2025/10/28/business/energy-environment/trump-nuclear-westinghouse-deal.html>.
- 102 Nuclear Regulatory Commission, “Expected Applications for Power Upgrades,” last updated March 24, 2026, <https://www.nrc.gov/reactors/operating/licensing/power-upgrades/status-power-apps/expected-applications>.
- 103 Zac Harmon, “Palisades Nuclear Plant Another Step Closer to Restarting,” Fox17, March 30, 2026, <https://www.fox17online.com/news/local-news/palisades-nuclear-plant-another-step-closer-to-restarting>; “NextEra and Google Ink a Deal to Restart Duane Arnold,” Nuclear Newswire, October 28, 2025, <https://www.ans.org/news/2025-10-28/article-7501/nextera-and-google-ink-a-deal-to-restart-duane-arnold/>.
- 104 “NRC Approves Diablo Canyon License Renewal, Extension,” Nuclear Newswire, April 3, 2026, <https://www.ans.org/news/2026-04-03/article-7906/nrc-approves-diablo-canyon-license-renewal-extension/>.
- 105 <https://www.whitehouse.gov/releases/2025/05/president-trump-signs-executive-orders-to-usheer-in-a-nuclear-renaissance-restore-gold-standard-science/>
- 106 Nuclear Regulatory Commission, “Executive Order 14300 of May 23, 2025: Ordering the Reform of the Nuclear Regulatory Commission,” Federal Register 90, no. 102 (May 29, 2025): 22587–90, <https://www.federalregister.gov/documents/2025/05/29/2025-09798/ordering-the-reform-of-the-nuclear-regulatory-commission..>
- 107 Miranda McGuire, “Expected NRC Executive Order 14300 Rulemaking Timeline,” Nuclear Innovation Alliance, April 30, 2026, <https://nuclearinnovationalliance.org/index.php/expected-nrc-executive-order-14300-rulemaking-timeline>.
- 108 Nuclear Regulatory Commission, “Major Reorganization Supports Efficiency, Innovation,” news release, February 4, 2026, <https://www.nrc.gov/sites/default/files/cdn/doc-collection-news/2026/26-017.pdf>.
- 109 Nuclear Regulatory Commission, “NRC Taps Jeremy Bowen to Lead New Office for Advanced Reactors,” news release, March 2, 2026, <https://www.nrc.gov/sites/default/files/cdn/doc-collection-news/2026/26-026.pdf>.
- 110 Nuclear Regulatory Commission, “New Nuclear Reactor Generic Environmental Impact Statement (NR GEIS),” last updated April 30, 2026, <https://www.nrc.gov/reactors/new-reactors/advanced/modernizing/rulemaking/advanced-reactor-generic-environmental-impact-statement-geis#stat>; Nuclear Regulatory Commission, “Planned Rulemaking Activities – Rule,” last updated May 1, 2026, <https://www.nrc.gov/reading-rm/doc-collections/rulemaking-ruleforum/active/ruledetails?id=1139>.
- 111 John Martin Weed and Brittany Morgan, “Improving Environmental Reviews through a Categorical Exclusion for Microreactors,” Nuclear Innovation Alliance, April 1, 2025, <https://nuclearinnovationalliance.org/improving-environmental-reviews-through-categorical-exclusion-microreactors>.

REGULATING CHANGE AND CHANGING REGULATION

- 112 Nuclear Regulatory Commission, Modernizing Reactor Licensing, Safety Oversight, and Siting Practices, (2026), <https://www.nrc.gov/docs/ML2617/ML26176A438.pdf>.
- 113 Nuclear Regulatory Commission, NRC Proposes Most Comprehensive Modernization of Reactor Licensing in Decades, 2026, <https://www.nrc.gov/sites/default/files/cdn/doc-collection-news/2026/26-071.pdf>.
- 114 Senate Environment and Public Works Committee, “Hearings: Oversight of the Nuclear Regulatory Commission,” archived webcast, September 3, 2025, <https://www.epw.senate.gov/public/index.cfm/hearings?ID=B2051D7E-B995-40A9-8824-5996021F1B97>.
- 115 Senate Environment and Public Works Committee, “Chairman Capito Leads First EPW Oversight Hearing of NRC Since 2023, Urges Further Improvement, Efficiency from the Commission,” press release, September 3, 2025, https://www.epw.senate.gov/public/_cache/files/8/6/8602e910-dd59-45c4-8eee-11251868b3ab/C4F9EEDD26F3BB167AC198A2C8B10EF5567FA14991BF86F45AA61A1AC74F4DD6.09-03-2025-chairman-capito-opening-statement.pdf.
- 116 Sheldon Whitehouse, opening statement before Senate Environment and Public Works Committee at hearing entitled “Oversight of the Nuclear Regulatory Commission,” September 3, 2025, https://www.epw.senate.gov/public/_cache/files/8/1/81269a39-4166-43c5-bfee-7c4b5de85d78/CF8059C235D7C32D94321355CF4247BE7E6640EBEE4B594D98BECA7EF6372C15.9.3.2025-opening-remarks.pdf.
- 117 Department of Energy, “Categorical Exclusion for Advanced Nuclear Reactors,” Federal Register 91, no. 21 (February 2, 2026): 4550–52, <https://www.federalregister.gov/documents/2026/02/02/2026-02071/categorical-exclusion-for-advanced-nuclear-reactors>.
- 118 John Wagner, “The United States needs to deploy advanced reactors at scale to maintain energy security and economic leadership,” LinkedIn, February 4, 2026, https://www.linkedin.com/posts/john-wagner-b3822350_advancednuclear-nuclearenergy-nuclear-activity-7424978003165597696-nMlk/.
- 119 Nuclear Regulatory Commission, “Expectations for NRC Staff Involvement with Prospective NRC License Applicants Planning to Refer to DOE and DOW Authorization Processes,” memorandum, December 11, 2025, 1, <https://www.nrc.gov/docs/ML2532/ML25322A208.pdf>.
- 120 Committee for Review and Evaluation of the Medical Use Program of the Nuclear Regulatory Commission, “The Linear, No-Threshold Model,” in *Radiation In Medicine: A Need For Regulatory Reform*, edited by K. L. D. Gottfried and G. Penn (National Academies Press, 1996), <https://www.ncbi.nlm.nih.gov/books/NBK232710/>.
- 121 Wolfgang Weber and Pat Zanzonico, “The Controversial Linear No-Threshold Model,” *Journal of Nuclear Medicine* 58, no. 1 (January 2017): 7–8, <https://jnm.snmjournals.org/content/58/1/7>.
- 122 Dominique Laurier et al., “The Scientific Basis for the Use of the Linear No-Threshold (LNT) Model at Low Doses and Dose Rates in Radiological Protection,” *Journal of Radiological Protection: Official Journal of the Society for Radiological Protection* 43, no. 2 (2023), <https://pubmed.ncbi.nlm.nih.gov/37339605/>; Warren Cornwall, “Scientists Decry Trump’s Rush to Loosen Radiation Exposure Standards,” *Science*, February 19, 2026, <https://www.science.org/content/article/scientists-decry-trump-s-rush-loosen-radiation-exposure-standards>.
- 123 John C. Wagner et al., “Reevaluation of Radiation Protection Standards for Workers and the Public Based on Current Scientific Evidence,” Idaho National Laboratory, July 2025, 27, https://inl.gov/content/uploads/2023/07/INLRPT-25-85463_Reevaluation-of-Radiation-Protection-Standards-R0-Final.pdf.
- 124 Nuclear Regulatory Commission, “Linear No-Threshold Model and Standards for Protection against Radiation,” Federal Register 86, no. 156 (August 17, 2021): 45923–36, https://www.federalregister.gov/documents/2021/08/17/2021-17475/linear-no-threshold-model-and-standards-for-protection-against-radiation?utm_source=chatgpt.com.
- 125 Wagner et al., “Reevaluation of Radiation Protection,” v, ES-3.
- 126 Katy Huff, “Loosening Radiation Exposure Rules Won’t Speed Up Nuclear Energy Production,” January 23, 2026, *Scientific American*, <https://www.scientificamerican.com/article/weaker-radiation-limits-will-not-help-nuclear-energy/>.
- 127 Cornwall, “Scientists Decry.”
- 128 Judi Greenwald, “Reconsidering the U.S. Radiation Protection Framework under Executive Order 14300,” Nuclear Innovation Alliance blog, February 24, 2026, <https://nuclearinnovationalliance.org/reconsidering-us-radiation-protection-framework-under-executive-order-14300>.

REGULATING CHANGE AND CHANGING REGULATION

- 129 Department of Energy, “Action: Approval to Eliminate ALARA from All Department of Energy (DOE) Directions and Regulations,” memorandum, <https://nukewatch.org/wp-content/uploads/2025/11/DOE-ALARA-memo.pdf>; Francisco “A.J.” Camacho, “DOE Eliminates Eisenhower-Era Radiation Standard to Boost Nuclear Projects,” E&E News, January 15, 2026, <https://www.eenews.net/articles/doe-eliminates-eisenhower-era-radiation-standard-to-boost-nuclear-projects/>.
- 130 Nico Portuondo, “Nuclear Push Tests Dems’ Red Line on Radiation Safety,” E&E News, January 21, 2026, <https://www.eenews.net/articles/nuclear-push-tests-dems-red-line-on-radiation-safety/>; Huff, “Loosening Radiation Exposure”; Ruhani Arya, “Project Finance Is the Missing Link for the Nuclear Buildout We Need,” Utility Dive, January 21, 2026, <https://www.utilitydive.com/news/project-finance-is-the-missing-link-for-the-nuclear-buildout-we-need/806334/>.
- 131 Nuclear Regulatory Commission, Reforming and Modernizing Radiation Protection Framework, 2026, <https://www.nrc.gov/docs/ML2618/ML26180A032.pdf>.
- 132 Id at 4.
- 133 Wellock, “Near Death,” 1.
- 134 NRCgov, “W12 – Enabling the Safe and Timely Deployment of Microreactors: Meeting Critical U.S. Needs,” YouTube, <https://www.youtube.com/watch?v=hgSUNgNZSTQ>.
- 135 NRCgov, “TH21 Powering Up: The New Era of Uprates,” https://www.youtube.com/watch?v=d15LA_prvVM. (Powering Up).
- 136 NRC, Powering Up.
- 137 NRC, Powering Up.
- 138 Nuclear Regulatory Commission, “NRC Reflects on 2025 Successes” news release, December 29, 2025, <https://www.nrc.gov/sites/default/files/cdn/doc-collection-news/2025/25-071.pdf#:~:text=The%20NRC%20completed%20over%20700%20licensing%20actions,hours%2C%20while%20continuing%20to%20meet%20safety%20standards>.
- 139 Congressional Budget Office, “Delays in Nuclear Reactor Licensing.”
- 140 Walker and Wellock, Short History, 2024.
- 141 Ryan Spangler et al., “Potential Cost Reduction in New Nuclear Deployments Based on Recent AP1000 Experience: Systems Analysis and Integration Campaign,” INL/RPT-25-84701, Department of Energy, June 12, 2025, 15, https://sai.inl.gov/content/uploads/29/2025/06/M3_SAI-AP1000_Lessons_Rev6-nocomments-002.pdf.
- 142 Hannah Ritchie, “What Are the Cleanest and Safest Sources of Energy?” Our World in Data, February 10, 2020, <https://ourworldindata.org/safest-sources-of-energy>.
- 143 Department of Energy, “Advantages and Challenges of Nuclear Energy,” June 11, 2024, https://www.energy.gov/ne/articles/advantages-and-challenges-nuclear-energy#:~:text=**Challenges**:%20*%20**Public%20awareness**%20Commercial%20nuclear%20power,power%20plant%20can%20be%20discouraging%20for%20stakeholders.
- 144 John Hansel, “New Amendments to NEPA in the Fiscal Responsibility Act of 2023,” ICF, June 27, 2023, [https://www.icf.com/insights/environment/new-nepa-amendments-fiscal-responsibility-act-2023#:~:text=The%20prior%20imposition%20of%20time,may%20be%20less%20than%20anticipated.&text=If%20a%20lead%20agency%20is,the%20applicable%20law\(s\)](https://www.icf.com/insights/environment/new-nepa-amendments-fiscal-responsibility-act-2023#:~:text=The%20prior%20imposition%20of%20time,may%20be%20less%20than%20anticipated.&text=If%20a%20lead%20agency%20is,the%20applicable%20law(s)).
- 145 Nuclear Regulatory Commission, “Linear No-Threshold Model.”
- 146 Administrative Conference of the United States, “User Fees,” December 22, 2023, <https://www.acus.gov/document/user-fees-0>.
- 147 Nuclear Regulatory Commission, “Fee Schedules; Fee Recovery for Fiscal Year 2025,” Federal Register 90, no. 119 (June 24, 2025): 2730–65, <https://www.govinfo.gov/content/pkg/FR-2025-06-24/pdf/2025-11544.pdf>. For the resort to user fees in response to the national debt, see Erika Lietzan, “User Fee Programs: Design Choices and Processes,” Administrative Conference of the United States, November 9, 2023, 17, footnote 89, https://www.acus.gov/sites/default/files/documents/User-Fees-Final-Report-2023.11.09_0.pdf.

REGULATING CHANGE AND CHANGING REGULATION

- 148 The White House, “Executive Order 14215 of February 18, 2025, Ensuring Accountability for All Agencies,” Federal Register 90, no. 35 (February 24, 2025): 10447–49, <https://www.federalregister.gov/documents/2025/02/24/2025-03063/ensuring-accountability-for-all-agencies>; Environmental Protection Agency, “Summary of Executive Order 12866 – Regulatory Planning and Review: 58 FR 51735; October 4, 1993,” last updated January 2, 2026, <https://www.epa.gov/laws-regulations/summary-executive-order-12866-regulatory-planning-and-review>.
- 149 Nuclear Regulatory Commission, “Transparency,” July 10, 2024, <https://www.nrc.gov/public-involve/open/transparency>.
- 150 Nuclear Regulatory Commission, “NEPA Amendments/ADVANCE Act,” last updated October 2, 2025, <https://www.nrc.gov/about-nrc/regulatory/licensing/ecoe/modernizing/fra-adv-act>.
- 151 Senate Committee on Environment and Public Works, Advanced Clean Energy and Licensing Act of 2025 (Engrossed Amendment House Version), May 8, 2024, 82–83, https://www.epw.senate.gov/public/_cache/files/5/0/5053d4be-a56e-446d-8341-53ad78c3e82f/82728233C96DC75092F9436066FAB212.bills-118s870eah.pdf.
- 152 For the relevant text see, Atomic Energy Act of 1954 (as amended through P.L. 118–67, enacted July 9, 2024), section 103, <https://www.govinfo.gov/content/pkg/COMPS-1630/pdf/COMPS-1630.pdf>.
- 153 Nuclear Regulatory Commission, “Staff Requirements – SECY-24-0032 – Revisiting the Mandatory Hearing Process at the U.S. Nuclear Regulatory Commission,” memorandum, July 18, 2024, <https://www.nrc.gov/docs/ML2420/ML24200A044.pdf>.
- 154 “Former NRC Commissioners Lend Support to Efforts to Eliminate Mandatory Hearings,” Nuclear Newswire, June 6, 2025, <https://www.ans.org/news/2025-06-06/article-7095/former-nrc-commissioners-lend-support-to-efforts-to-eliminate-mandatory-hearings/>.
- 155 Nuclear Innovation Alliance, “Improving the Effectiveness,” 12.
- 156 https://d1dth6e84htgma.cloudfront.net/H_R_Nuclear_Advisory_Committee_Reform_Act_833e784f98.pdf
- 157 Nuclear Innovation Alliance, “Improving the Effectiveness,” 15.
- 158 Francisco “A.J.” Camacho, “How the NRC Lost Its Independence,” E&E News, February 17, 2026, <https://www.eenews.net/articles/how-the-nrc-lost-its-independence/>.
- 159 https://d1dth6e84htgma.cloudfront.net/H_R_NRC_Staff_Pay_Alignment_Act_14f6490ec1.pdf
- 160 Oakridge Institute for Science and Education, “ORISE Report Shows Overall Number of Nuclear Engineering Degrees Decreases to Lowest Level in More Than a Decade,” January 9, 2024, <https://orise.ornl.gov/news/archive/2024/nuclear-engineering-degrees-decrease-to-lowest-level-in-more-than-a-decade.html>.
- 161 Nuclear Regulatory Commission, Reforming and Modernizing Radiation Protection, 2026.
- 162 Environmental Protection Agency, “Radiation Sources and Doses,” last updated February 19, 2026, <https://www.epa.gov/radiation/radiation-sources-and-doses>; Agency for Toxic Substances and Disease Registry, “Sources of Population Exposure to Ionizing Radiation,” chap. 6 in Toxicological Profile for Ionizing Radiation (1999), <https://www.ncbi.nlm.nih.gov/books/NBK597564/>.
- 163 Nuclear Regulatory Commission, Reforming and Modernizing Radiation Protection, 2026, at 5.
- 164 Id.
- 165 Ho Nieh, “The Nuclear Regulatory Commission’s Defining Moment,” RealClear Energy, March 10, 2026, https://www.realclearenergy.org/articles/2026/03/10/the_nuclear_regulatory_commissions_defining_moment_1169442.html.

Energy Innovation Reform Project

10306 Eaton Place, Suite 300

Fairfax, VA 22030

www.innovationreform.org

info@innovationreform.org