The Urgency of NRC Reform

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There is growing recognition that new nuclear energy is essential to achieving our energy security and climate goals, and that Nuclear Regulatory Commission (NRC) reform is needed to enable new nuclear energy. Our mission at the Nuclear Innovation Alliance (NIA) is to help create the conditions necessary for the successful commercialization of new nuclear energy technologies, which includes NRC reform. Two things are required to make NRC reform happen: (1) a shared sense of urgency and (2) a shared willingness to roll up our sleeves and dig deeply into removing the operational and organizational barriers that are getting in the way of meeting this moment.

The NRC's job is to license new reactors and oversee existing ones to ensure the public can safely benefit from nuclear energy. The NRC boasts a dedicated, highly technical staff and a legacy of overseeing a remarkably safe nuclear industry. As an independent, bipartisan Commission, the NRC has a long-standing history of remaining mission-focused and insulated from political pressure, strengthening its technical credibility, international respect and public trust.

But it needs to continue to improve its efficiency. Historically, public debate around the NRC was between anti-nuclear voices advocating for slower licensing or fewer nuclear power plants, and industry advocating for streamlined regulations and more nuclear power plants. NIA and others are injecting a different message into this conversation: that there is a public interest in effective and efficient licensing because there is a public interest in achieving energy security while reducing carbon emissions as quickly as possible. (See the recommendations in NIA's 2023 licensing efficiency report).

President Trump issued Executive Order (EO) 14300 on NRC reform in May 2025. The priorities set forth in this EO align with what industry and advocates have been working on for years, and effective implementation is imperative to achieve the Administration's nuclear energy goals. The NRC is already actively working to reform its regulations and help enable the rapid deployment of new nuclear reactors through dozens of rulemakings. Stakeholders have been working with NRC and are proposing innovative solutions. Leveraging the NRC's ongoing rulemaking efforts and ADVANCE Act initiatives is key to effective implementation of the executive orders.

EO14300 also directed internal NRC reform to restructure the agency. Restructuring while maintaining adequate staffing and improving NRC organizational culture is essential to continue enabling the path forward. (See NIA report and recommendations on organizational culture).

It is not only possible but essential to maintain the NRC's independence, credibility, and technical capacity while also making it more efficient. A trusted and competent safety regulator is required to achieve the ambitious nuclear power expansion goals set forth by presidents from both parties and supported by bipartisan majorities in Congress. A bipartisan set of independent commissioners, experienced civil service leaders, and a dedicated, accountable and empowered staff are the conditions for success. Preserving the NRC's independence means ensuring that leadership and staffing decisions are based on competence and performance, and that regulations are written and reviewed solely by technical experts. This is essential to sustain the global reputation of U.S. nuclear technology exports and make efficient use of precious time and resources at this critical moment for nuclear power.

NRC licensing efficiency is just one example of a broader challenge for all clean energy, not just nuclear energy. U.S. infrastructure permitting rules implicitly assume that it is okay if it takes years or even decades to build new infrastructure. This premise is no longer acceptable, and, in retrospect, it probably never was just or correct. Ensuring energy security and emission reductions requires that we replace and build new clean

energy infrastructure rapidly. Action is required by NRC staff, the Commission, Congress, the nuclear industry, and civil society to reform NRC licensing on three timescales: near-term, medium-term and long-term.(See Key Recommendations for Reforming U.S. Nuclear Energy Regulation).

In the near term, more than a dozen advanced reactor developers are engaging one-on-one with the NRC to obtain approvals under existing rules. While this is challenging because current licensing pathways have been tailored to conventional, large, light water reactors, NRC staff and applicants continue to make progress in licensing of new nuclear technology, as evidenced by recent approvals and expedited timelines. For example, Kairos Power and Abilene Christian University were awarded construction permits (CP) for their test and research reactors in 2024. Also, NuScale was awarded Standard Design Approval in May 2025, which indicates that NRC staff have completed their technical review of the design. This will enable the NuScale design to be formally referenced in an application for a CP, operating license, combined license, or manufacturing license. Furthermore, TerraPower's CP was originally scheduled to take 27 months and was actually completed in 18 months. Long Mott and Clinch River are expected to meet CP schedules of 18.5 and 17 months, respectively. NRC staff and applicants are incorporating lessons learned through ongoing experience to improve licensing timelines through mundane but important practices like disciplined project management and clear communication. Successful early engagements depend on both the NRC and the applicants.

For the medium term, the NRC is engaged in three major rulemaking efforts. First, it is in the middle of a multi-year rulemaking on risk-informed, performance-based and technology-inclusive licensing (referred to as "10 CFR Part 53", or more simply "Part 53"). This rulemaking is required under the 2019 Nuclear Energy Innovation and Modernization Act (NEIMA). As described in NIA's Part 53 paper, the NRC staff's proposed draft rule was flawed but fixable with leadership by the Commission. In March 2024, the Commission stepped up, providing leadership and clear direction to NRC staff. The Commission's vote on the proposed Part 53 rule and the accompanying Staff Requirements Memorandum instructed the staff to make major changes to improve the draft. The staff produced an updated draft rule in October 2024. NIA submitted its own public comments, as well as a joint NGO letter and joint stakeholder comments.

The NRC is also developing a proposed rule to address licensing of microreactors and other low consequence reactors. The rulemaking was initiated by the May 2025 EO and the ADVANCE Act that directed the NRC to enable high-volume licensing of microreactors and modular reactors while considering the use of general licenses. It builds on prior engagements between NRC and Shepherd Power to dramatically shorten microreactor review timelines. The NRC held a comment-gathering public meeting in July to discuss the high-level concepts of what the rule would address. NIA provided feedback on the topics raised at NRC's public meeting. Additionally, a group of stakeholders sent a letter that encouraged the NRC to allow a regulatory framework similar to that used for non-power production and utilization facilities.

Finally, under the new EO, NRC is working on a major rewrite of NRC rules (See NIA letter to NRC on priorities for the rule rewrite). The majority of this rewrite is expected to be released in the first few months of 2026 (See NIA's expected timeline). The Commission will need to ensure this set of rules, including the low-consequence reactor rule and Part 53, work as a system to enable further risk-informed licensing. Effective NRC staff incorporation of public comments will be critical in creating a useful set of rules.

The Commission is also making progress on other rulemakings. For example, in 2023, NRC promulgated a risk-informed approach for rightsizing emergency planning zones. The Commission recently extended the lifetime of reactor design certifications from 15 to 40 years, applying this extension retroactively to already approved designs. It also finalized the licensing fee reform rule, reducing hourly rates for advanced nuclear reactor applicants. The licensing fee reform went into effect on October 1st and reduced the fees by over 50% for advanced reactor applicants and pre-applicants.

For the long term, we need to re-imagine licensing in a world where the NRC must license dozens, if not hundreds, of reactors per year. Ultimately, this will require streamlined and standardized NRC processes and practices as well as standardized technologies. (See Enabling High Volume Licensing of Advanced Nuclear Energy).

There is much Congress can do to reform the NRC through authorization, appropriations, and oversight. Requiring Part 53 rulemaking under NEIMA was an important congressional achievement, but additional off-

fee appropriations and oversight are essential to ensure successful completion of the rule, and to ensure the NRC addresses the management and organizational issues that stand in the way of efficient licensing. In July 2024, President Biden signed into law the ADVANCE Act, which garnered broad bipartisan and bicameral support and initiates several useful NRC reforms and rulemakings. For example, it improves how the NRC charges fees to applicants, authorizes hiring incentives to address the NRC's workforce issues, and establishes prizes to cover licensing costs for early movers. In response to the enactment of the ADVANCE Act, the NRC promptly organized project teams and launched a public Implementation Status Dashboard. NRC progress on implementing the ADVANCE Act continues to be a key focus area for Congressional oversight and for stakeholders in 2025 (See NIA report on ADVANCE Act progress).

We are seeing bipartisan and bicameral leadership on NRC reform. Senate Environment and Public Works and House Energy and Commerce leadership have demonstrated commitment to NRC reform legislation and oversight. Effective congressional oversight is crucial for holding the NRC accountable and improving its performance. Additionally, the Senate confirmed two new commissioners to the NRC on a bipartisan basis, allowing for a full complement of commissioners.

NIA is pleased to see companies, civil society, NRC staff, Commissioners, and Congress recognizing and communicating the urgency of NRC reform and committing to do the hard work to make it happen. But more is needed. In addition to the useful reforms in the ADVANCE Act, there are many options for Congress to pursue through legislation and oversight. For example, NIA recommends focusing the NRC's Advisory Committee on Reactor Safeguards on reviewing only novel safety issues (see NIA ACRS report) to make the best and most efficient use of their expertise. NIA welcomes the NRC's action to remove the existing blanket requirement for oral hearings in licensing approval processes. NIA would also like Congress to eliminate certain mandatory hearings, as recommended in a recent Idaho National Laboratories report (see INL report), which waste agency time and resources without benefiting the licensing process.

NIA would like to see the NRC continue to efficiently and effectively implement ADVANCE Act reforms and executive orders. We'd like to see an NRC staff that is both empowered and accountable to effectively and efficiently review license applications. We are heartened by recent progress on NRC reform, and we urge Congress and the Administration to protect the NRC's independence, credibility, and technical capacity to successfully meet this moment.

For more information on NRC Reform, please contact the NIA at info@nuclearinnovationalliance.org.