Letter to the President on NRC Regulation

Ernie Kee · 25 February 2025

About this document (background added November 2026)

By early 2025 three developments were pressing the NRC to license reactors faster: NEIMA (2019); the ADVANCE Act, signed in July 2024, which redirected the agency toward enabling deployment; and the Supreme Court's June 2024 *Loper Bright* decision, which ended judicial deference to agency interpretations of the statutes they administer.

In this letter Ernie Kee argues that the NRC's safety framework should not be weakened in the rush to deploy, and that quantitative risk estimates cannot be relied on to predict reactor accident risk. He proposes a different way to speed licensing: second applicants' engineering staff to the NRC during review instead of charging additional fees. Copies went to Texas's U.S. senators and representative, two Texas state senators, the Governor of Texas, the Senate Energy and Natural Resources and House Energy and Commerce committees, the Secretary of Energy, the NRC commissioners, the Department of Government Efficiency, and the Nuclear Energy Institute.

The letter is reproduced as sent, except that the sender's home address, telephone number, e-mail address, and signature have been removed.

February 25, 2025

President of the United States
The White House
1600 Pennsylvania Avenue NW
Washington, DC 20500

Dear Mr. President,

I am a strong supporter of nuclear power and have worked in the field for more than 45 years. More importantly, I want to ensure that nuclear power expands its share of the energy market absent accidents that could jeopardize its future growth.

I am writing to express my concerns about the growing pressure to weaken the Nuclear Regulatory Commission's (NRC) regulatory framework. While nuclear fission is the safest energy source available, it is inherently dangerous and must be carefully managed. For decades–starting with the Emergency Core Cooling Hearings in 1972–the NRC has ensured safe operation through a regulatory framework grounded in sound safety engineering principles. Controlling decay heat and preventing power excursions including prompt criticality require robust, inherently complex, and costly protections that must be maintained over a reactor's lifetime. Now is not the time to dismantle what is arguably the most successful regulatory framework for energy technology in existence.

I am increasingly concerned by mounting pressure from Congress and the courts on the NRC to accelerate reactor deployment at the expense of safety. Central to this issue are the Nuclear Energy Innovation and Modernization Act (NEIMA), the ADVANCE Act, and the Supreme Court's Loper Bright decision. These legislative and judicial actions effectively direct the NRC to determine "adequate protection" of public health and safety using what is, in essence, a slogan "risk-informed and performance-based regulation". While the NRC has properly incorporated quantitative risk assessment and key performance indicators into its power reactor oversight process to prioritize inspections and enforcement, rigorous statistical and probability analysis clearly demonstrate that quantitative risk assessment cannot reliably predict commercial reactor accident risk. A clear example is the accident at Three Mile Island Unit 2 (TMI-2), which occurred just one year after startup.

It is easy to see how Congress, the public, and even investors can be misled by risk quantifications such as Probabilistic Risk Assessment. For instance, the only risk estimate available for TMI-2 before the accident–found in NUREG-75/014 (WASH-1400)–gave a core melt frequency of once every million years. In reality, the accident rate was one per year. A careful review of commercial reactor accidents worldwide shows they tend to occur much earlier in reactor lifetimes than risk models suggest. Moreover, while accident frequency has declined with newer reactor generations, their severity–as measured by the International Nuclear Event Scale (INES)–has increased. One need only compare TMI-2 to Chernobyl and Fukushima to understand the consequences of over-reliance on flawed risk assessments.

The most egregious recent accident occurred at Chernobyl, where a so-called "confinement building" was used to contain the accident. Unlike at TMI-2, the containment buildings at Fukushima failed to prevent significant radioactive releases, likely due to structural weakening caused by successive foreshocks and aftershocks surrounding the earthquake mainshock.

Mr. President, the United States can responsibly and efficiently expand commercial nuclear fission through rigorous safety engineering and effective regulation. The NRC is funded almost entirely by fees charged to licensees under the Omnibus Budget Reconciliation Act (OBRA) of 1990. A more efficient and accelerated

approach to reactor deployment would be to second the engineering staff of license applicants to the Commission once a design application is submitted, rather than requiring licensees to pay substantial additional fees to the NRC on top of the significant costs already incurred in developing technical specifications. Temporarily integrating these experts into the NRC licensing framework would ensure that those most familiar with the design, operation, and maintenance requirements are immediately and directly available to support the technical specification evaluation process.

For example, the Request for Additional Information (RAI) process, which primarily serves to transfer knowledge to NRC staff, could be significantly streamlined if the applicant's design team operated within the NRC's organizational structure. This approach demonstrates how the goal of efficient and timely reactor deployment can be achieved without compromising prudent safety engineering principles, while also eliminating duplicative efforts and reducing unnecessary costs.

I appreciate your time and consideration in reviewing this matter. Please do not hesitate to contact me should you require further details or discussion.

Sincerely,

Ernie Kee, a private citizen

p.s. Ernest (Ernie) J. Kee is retired after more than 45 years of experience in nuclear reactors and related technologies. His career began in the U.S. Navy submarine service, followed by roles in thermal-hydraulics analysis at the Idaho National Laboratory (INL) (formerly INEL), fuel vendor work in Washington State, and culminating at a dual-unit commercial nuclear power plant after taking on appointments in thermal-hydraulics, fuel performance, Emergency Response (ERO) Nuclear Engineer, Shift Technical Advisor (STA), Reactor Engineer, Unit Reactor Engineer, and Probabilistic Risk Assessment groups. He has taught graduate and undergraduate courses on risk assessment and engineering ethics at Texas A&M University, College Station. He currently engages with academia, working with graduate students at the University of Illinois' NPRE SoTeRiA laboratory.

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