



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 18, 2023

The Honorable Thomas R. Carper
Chairman, Committee on Environment
and Public Works
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

Thank you for your July 14, 2023, letter regarding the Nuclear Regulatory Commission (NRC) staff's draft proposed rule, "Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors," also known as "Part 53," which is currently under consideration by the Commission. Completion of an effective Part 53 will enable the agency to make timely, predictable, and transparent decisions regarding the safe and secure development of advanced reactors while maintaining the agency's standards for protecting public health and safety. The draft proposed rule reflects significant effort and interactions with stakeholders by the agency's staff. However, I share the concerns expressed in your letter and agree that "a successful Part 53 regulatory framework should reflect congressional intent" and that it is incumbent on the Commission to ensure that it does.

As noted in your letter, I committed to providing specific direction to staff to resolve outstanding issues.¹ In keeping with that commitment, my vote on Part 53 includes line-by-line edits of the rule text.² While this approach required significant effort, I believe this is the best approach to provide clear, specific direction, to support timely completion of the rulemaking, and to be responsive to Congress, applicants, and stakeholders. Through this action, I seek to collaborate with my colleagues and enable innovation by advanced reactor technology developers by providing a flexible regulatory framework supported by guidance regarding the specific tools

¹ Letter from Thomas Carper, Chairman, Committee on Environment and Public Works, United States Senate, *et al.*, to Annie Caputo, Commissioner, United States Nuclear Regulatory Commission, 2 (July 14, 2023) (Congressional Letter); *see also* U.S. Senate Committee on Environment and Public Works, "The Nuclear Regulatory Commission's Proposed Fiscal Year 2024 Budget" (Apr. 19, 2023).

² Commissioner Caputo Voting Record, "SECY-23-0021—Proposed Rule: Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors" (July 18, 2023) (ADAMS Accession No. ML23199A289), available at <https://www.nrc.gov/reading-rm/doc-collections/commission/cvr/2023/index.html> (Caputo Vote).

that may be used. I also seek to enable regulatory innovation, to reduce subjectivity where possible, and to retain consistency with current regulatory practices where it makes sense.

Your letter lists several items consistently identified by stakeholders as some of the most important issues remaining to be resolved the Commission.³ I will briefly summarize how I addressed these issues in my vote.

A two-framework structure that limits the proposed rule's overall benefit:

My edits to the proposed rule remove the staff's proposed Framework B. The agency staff made a respectable attempt at adapting the existing deterministic framework to be technology-inclusive but the end result would likely be too cumbersome to be utilized by advanced reactor applicants. I also do not believe proposed Framework B is truly responsive to the Congressional direction in the Nuclear Energy Innovation and Modernization Act. In any event, Parts 50 and 52 remain available for applicants who prefer to use a deterministic framework.

The use of Quantitative Health Objectives (QHOs) as performance criteria:

My edits to the proposed rule eliminate the codification of the QHOs. Codifying the QHOs as suggested by the staff would have been a sea change in their use. Rather than a line of demarcation beyond which costs must be justified by the benefits of a requirement, the QHOs would have become a floor for the issuance and maintenance of a license. This would pose a number of practical difficulties including the near impossibility of continuously demonstrating that risk levels remain below the QHOs since the standard would be constantly shifting due to factors, such as population shifts, which are outside the control of the agency or licensee.

Codification of the QHOs in rule text would contravene repeated Commission direction⁴

³ Congressional Letter at 2.

⁴ See Staff Requirements—SECY-89-102—Implementation of the Safety Goals, 4 (June 15, 1990) (stating “the NRC will not use industry’s design objectives as the basis to establish new requirements.”) (ML003707881); see also Staff Requirements—SECY-10-0121—Modifying the Risk-Informed Regulatory Guidance for New Reactors (Mar. 2, 2011) (ML110610166); Staff Requirements—SECY-19-0117—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 (May 26, 2020) (ML20147A504), and Staff Requirements—SECY-20-0032—Rulemaking Plan on “Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors” (Oct. 2, 2020) (ML20276A293).

to the staff to regulate advanced reactors to the same level of safety as the current fleet of operating reactors, reaffirmed as recently as 2020:

In its work on the regulatory framework for advanced reactors, the staff should continue to recognize that the Commission's established policy on the application of the safety goals and safety performance expectations provides an acceptable minimum safety standard for new reactors while taking into account the need to adapt the aspects of our current regulatory framework for reactors ... to reflect the significantly lower risks inherent in the design of advanced reactors.⁵

The inclusion of the principle of As Low As Reasonably Achievable (ALARA) as a design requirement:

While the ALARA principle is valuable as an operational requirement, I do not believe that ALARA should be transformed into a design requirement since it would be inherently subjective. It would be difficult for designers to demonstrate compliance and achieve finality in design certification approval. As I noted in my vote, removing the ALARA requirements “matches the treatment of those requirements for currently operating reactors” and “avoids the issue of requiring a designer to develop the operational programs that would be used in conjunction with the design features.”⁶ Thus, I proposed edits that are intended to “clarify that ALARA requirements during the design process are limited to the establishment and use of design objectives for radiation dose” comparable to how they are applied to currently operating reactors.⁷

The requirement to protect against beyond-design-basis events in the design basis:

My edits remove the staff's suggested treatment of beyond-design-basis events that had been included in the deterministic Framework B. Within Framework B, the staff had proposed including additional licensing basis events. The proposal would have required a designer to postulate errors they *might* have made in their design that the NRC *might* eventually determine warrant regulatory action. This would exceed the requirements imposed on currently operating reactors. Additionally, given the lack of guidance on the identification of hypothetical events that would fall into that category, the proposal is not

⁵ SRM-SECY-19-0117 at 1.

⁶ Caputo Vote at 8.

⁷ *Id.*

in alignment with the agency's Clarity Principle of Good Regulation that "[a]gency positions should be readily understood and easily applied."⁸

The inclusion of a facility safety program:

My edits would remove the requirement for a facility safety program from the draft proposed rule.⁹ This new program would exceed requirements imposed on currently operating reactors under 10 CFR parts 50 or 52. Licensees would be required to self-impose safety enhancements under threat of criminal penalties and without consideration of safety significance or cost benefit, contrary to the requirements of our Backfit Rule.¹⁰ In addition, the regulatory analysis of this requirement developed by the staff clearly indicates such a program would be a significant cost driver for applicants and licensees without identifying any safety benefits.

Inconsistent application of new programs and terminology:

My edits would eliminate many instances of new and confusing terminology. For example, my vote strikes the staff's proposal to introduce requirements for safety objectives that differ from, and possibly conflict with, those of the Atomic Energy Act (AEA). The staff's proposal also slightly alters the quality assurance criteria which are already technology-inclusive. Achieving compliance with the NRC's quality assurance requirements is a rigorous process, an effort that suppliers might not choose to repeat simply to supply advanced reactor customers. The outcome might be fewer qualified suppliers who are approved to produce materials and equipment for advanced reactors.

These are examples of how words and phrases similar to those that are currently regulatory terms of art have been given slightly different meanings in the staff's proposal, potentially creating confusion and increased regulatory burden without any safety gains.

You stated in your letter how "it is critical and urgent that the new framework is established with the capacity to *license* the large volume of applications necessary to meet our energy and national security priorities, provide grid reliability, and achieve our environmental goals."¹¹ Congress directed the development, use, and control of atomic energy "to make the maximum contribution to the general welfare" subject to the protection of public health and safety and the

⁸ See Principles of Good Regulation, <https://www.nrc.gov/about-nrc/values.html#principles> (last reviewed/updated Oct. 13, 2022)

⁹ Caputo Vote at 8-9.

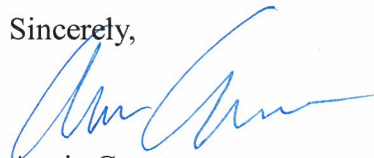
¹⁰ See 10 C.F.R. §§ 50.109; 52.63.

¹¹ Congressional Letter at 2-3 (emphasis added).

common defense and security.¹² Congress also declared licensing as the principal function for which the NRC was established.¹³ As such, the NRC is the gatekeeper to the safe and secure use of advanced reactors to achieve the priorities you listed. Part 53 has the potential to be the agency's biggest innovation in over 20 years and provide a path for the timely, predictable, and transparent licensing of advanced reactors. I am eager to work with my fellow commissioners to advance a proposed rule that will ultimately result in a framework that will be used and useful, recognizing the inherent safety benefits afforded by advanced reactor designs.

If you have any questions or if I can be of assistance in any way, please contact me or my chief of staff, Robert Bryans at 301-415-1855.

Sincerely,



Annie Caputo

¹² Atomic Energy Act of 1954 § 1, 42 U.S.C. § 2011(a); *see also* 42 U.S.C. § 2011(b) (also directing the development, use, and control of atomic energy to “promote world peace, improve the general welfare, increase the standard of living, and strengthen free competition in private enterprise.”).

¹³ Energy Reorganization Act of 1974 § 2(c), 42 U.S.C. § 5801(c).

Identical letter sent to:

The Honorable Thomas R. Carper
Chairman, Committee on Environment
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United States Senate
Washington, DC 20510

The Honorable Shelley Moore Capito
Ranking Member, Committee on Environment
and Public Works
United States Senate
Washington, DC 20510

The Honorable Tammy Duckworth
United States Senate
Washington, DC 20510

The Honorable Chris Coons
United States Senate
Washington, DC 20510

The Honorable Pete Ricketts
United States Senate
Washington, DC 20510

The Honorable Deb Fischer
United States Senate
Washington, DC 20510

The Honorable Cynthia M. Lummis
United States Senate
Washington, DC 20510

The Honorable Martin Heinrich
United States Senate
Washington, DC 20510

The Honorable Ted Budd
United States Senate
Washington, DC 20510

The Honorable James E. Risch
United States Senate
Washington, DC 20510

The Honorable Kevin Cramer
United States Senate
Washington, DC 20510

The Honorable Cathy McMorris Rodgers
Chair, Committee on Energy and Commerce
United States House of Representatives
Washington, DC 20515

The Honorable Frank Pallone, Jr.
Ranking Member, Committee on Energy and
Commerce
United States House of Representatives
Washington, DC 20515

The Honorable Michael C. Burgess, M.D.
United States House of Representatives
Washington, DC 20515

The Honorable Diana DeGette
United States House of Representatives
Washington, DC 20515

The Honorable Robert E. Latta
United States House of Representatives
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The Honorable Doris Matsui
United States House of Representatives
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The Honorable Brett Guthrie
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The Honorable Kathy Castor
United States House of Representatives
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The Honorable H. Morgan Griffith
United States House of Representatives
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The Honorable John P. Sarbanes
United States House of Representatives
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The Honorable Bill Johnson
United States House of Representatives
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The Honorable Benjamin L. Cardin
United States Senate
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The Honorable Paul D. Tonko
United States House of Representatives
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The Honorable Roger F. Wicker
United States Senate
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The Honorable Gus M. Bilirakis
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The Honorable Sheldon Whitehouse
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The Honorable Tony Cárdenas
United States House of Representatives
Washington, DC 20515

The Honorable Lindsey O. Graham
United States Senate
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The Honorable Larry Bucshon, M.D.
United States House of Representatives
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The Honorable Mark Kelly
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The Honorable Scott H. Peters
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The Honorable Mike Crapo
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The Honorable Richard Hudson
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The Honorable John Barrasso, M.D.
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The Honorable Marc A. Veasey
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The Honorable Kyrsten Sinema
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The Honorable Tim Walberg
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The Honorable Joe Manchin III
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The Honorable Ann McLane Kuster
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The Honorable Earl L. "Buddy" Carter
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The Honorable Lisa Blunt Rochester
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The Honorable Jeff Duncan
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The Honorable Darren Soto
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