



July 30, 2025

George Tartal and Elijah Dickson
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Input from the Nuclear Innovation Alliance on NRC actions on Low Consequence Reactors

Dear NRC Staff,

The Nuclear Innovation Alliance (NIA) is a non-profit, non-partisan “think and do” tank pursuing the public’s interest in new nuclear energy. We believe an effective risk-informed, performance-based, and technology-inclusive regulatory framework is critical to enable the deployment of advanced nuclear energy to meet U.S. energy security and climate goals.

NIA commends the NRC for evaluating current approaches and exploring new ones for licensing microreactors and other low-consequence reactors. Below we first provide comments and procedural suggestions on a proposal that has been put forward by other stakeholders and that could be implemented quickly. We then provide feedback and procedural suggestions on the topics raised at NRC’s public workshop on “Licensing Requirements for Microreactors and Other Low Consequence Reactors Rulemaking” on July 17-18, 2025.¹

1) **Non-Power Production or Utilization Facility Clarifications:** The Non-power Production or Utilization Facility (NPUF) License Renewal rulemaking (RIN 3150-AI96, NRC-2011-0087)² made changes to the NPUF regulatory framework such that the scope of reactors that could qualify as non-power reactors has expanded. These reactors can be subject to the more appropriate requirements associated with non-power reactors, and this change could significantly affect both design choices and licensing processes, as discussed in the May 15, 2025 ClearPath, Clean Air Task

¹ <https://www.regulations.gov/document/NRC-2025-0379-0001>

² Non-Power Production or Utilization Facility License Renewal. 12/30/2024. RIN 3150-AI96, NRC-2011-0087. <https://www.federalregister.gov/documents/2024/12/30/2024-30721/non-power-production-or-utilization-facility-license-renewal>

Force, and Veriten letter to the Commission.³ However, the terminology of “non-power reactor” and “power reactor” is not clearly defined, does not always seem consistent with the language in the NPUF regulations, and could create ambiguity, so it would be beneficial for the NRC to address and clarify these issues. A key advantage of the NPUF approach is that it could be implemented rapidly. NIA recommends that NRC consider some combination of the following, depending which could be completed the fastest: (1) a half-day workshop to solicit stakeholder feedback on this concept; (2) multiple rapid pilots; and (3) a direct final rulemaking to clarify terminology.

2) **Microreactors and Other Low-Consequence Reactors Rulemaking:** The rulemaking should include pathways for reactors that are inherently low consequence as well as a pathway for high-volume licensing of reactors that have undergone previous safety review. The NIA has published detailed recommendations in “Enabling High Volume Licensing of Advanced Nuclear Technology,” including ways to eliminate duplicative technical reviews and scale environmental reviews and hearings appropriately.⁴ NIA recommends that NRC consider how this rulemaking relates to other risk-informed and performance-based rulemakings, including 10 CFR Part 53.

A) **Entry Criteria:** The NIA supports the adoption of clear, risk-informed, and technology-inclusive criteria for regulating low-consequence reactors. The NRC should consider how this approach may overlap with the NRC’s current non-power reactor regulatory requirements and guidance, and should consider whether this requires any clarification.
NIA recommends that the NRC hold a public workshop to inform the establishment of entry criteria, including dose-acceptance limits and a Maximum Hypothetical Accident approach for consequence analysis, to enhance regulatory efficiency and clarity.

B) **Design Criteria Attributes:** *The NIA recommends that the NRC continue to pursue developing risk-informed and technology-inclusive approaches to radioactive shielding and radioactive effluent requirements, to support efficient regulation and technology innovation.*

³ “Transformative Regulatory Reform for New Reactors.” Clean Air Task Force, Clearpath, and Veriten. May 15, 2025. <https://www.nrc.gov/docs/ML2513/ML25136A333.pdf>.

⁴ White, P. and Ponangani, R.T. “Enabling High Volume Licensing of Advanced Nuclear Technology.” 12/31/2024. <https://nuclearinnovationalliance.org/enabling-high-volume-licensing-advanced-nuclear-energy>.

- C) **Price Anderson:** *The NIA is supportive of efforts to make adjustments to Price Anderson Act implementation so that liability limits are risk-informed, and so that requirements for microreactors and other low-consequence reactors are appropriate to the level of risk they present.*
- D) **Financial Qualification Requirements:** *The NIA supports NRC's efforts to evaluate and, as appropriate, adjust financial qualification requirements and decommissioning fund requirements to make them more "right-sized" for the project to which they are being applied. The NIA recognizes that current and future projects may look quite different from past large conventional nuclear projects, and the financial requirements put in place to serve existing reactors may not always be appropriate for smaller projects or new ownership structures.*
- E) **Environmental Reviews:** *The NIA sees important opportunities to improve the efficiency of environmental reviews and has commented and written on this topic in the past.⁵ In particular:*
- *The NRC and DOE should establish a categorical exclusion under NEPA for microreactors with specific parameters linked to minimal environmental impact as recommended in the April 2025 NIA report: "Improving Environmental Reviews through a Categorical Exclusion for Microreactors."⁶*
 - *For reactor projects not covered by a categorical exclusion, NIA recommends the NRC and/or DOE should adopt a risk-informed, performance-based approach, to include using environmental assessments (EAs) to evaluate impact rather than environmental impact statements (EISs) whenever sensible. Only when an EA proceeding finds the potential for significant impact is an EIS necessary.*
 - *The NRC's new reactor generic environmental impact statement (NR GEIS) effort could provide another mechanism for accelerated NEPA compliance. NIA recommends that the Commission expeditiously complete its NR GEIS rulemaking.*
- F) **Oversight and Inspection:** *NIA is supportive of NRC's efforts to develop a graded approach to oversight and inspection for low-consequence reactors. We recommend a graded approach that is appropriate for all reactors and that would*

⁵ For example: Weed, J.M. and Lutz, B. "Improving Environmental Reviews through a Categorical Exclusion for Microreactors." April 2025. Link:<https://nuclearinnovationalliance.org/index.php/improving-environmental-reviews-through-categorical-exclusion-microreactors>; NIA Public Comments "Request for Information Regarding Categorical Exclusions. Docket ID DOE_FRDOC_0001-4513. (87 FR 68385)." 12/30/2022. <https://nuclearinnovationalliance.org/index.php/comment-doe-categorical-exclusions>.

⁶ Weed, J.M. and Lutz, B. "Improving Environmental Reviews through a Categorical Exclusion for Microreactors." April 2025. Link:<https://nuclearinnovationalliance.org/index.php/improving-environmental-reviews-through-categorical-exclusion-microreactors>.

enhance regulatory efficiency and effectiveness by concentrating NRC resources on areas of highest safety significance. This is consistent with direction provided in the ADVANCE Act and the President's Executive Orders, and is consistent with other NRC efforts to implement a graded approach, recently, for example, in Site Characterization of External Hazards,⁷ and for many years in regulation of research and test reactors.⁸ The NRC has also worked to implement a graded approach to inspections for existing reactors, and can evaluate that experience in developing the approach for low-consequence reactors.⁹

- G) **EO 14300 Sec. (e):** NRC staff are assessing EO 14300, Sec. (e), to consider to what extent high-volume licensing of microreactors and modular reactors or components should be regulated through general licenses. General licenses are currently used under 10 CFR Part 31 to provide high volume licensing for devices and objects that are often manufactured at scale, such as measurement, detection, and light-emitting items.¹⁰ *NIA agrees that considering the use of general licenses is useful. As part of this assessment, NIA recommends that NRC consider whether this approach requires legislative changes.*

Thank you for your consideration of these comments. If you have questions, please contact Brittany Lutz (BLutz@nuclearinnovationalliance.org).

Best,
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President & CEO
Nuclear Innovation Alliance

⁷ Thompson, J. and Munson, C. "Applying a Graded Approach and Adapting Guidance on Site Characterization of External Hazards for Advanced Reactor and Microreactor Applications." USNRC. October 30, 2024. <https://www.nrc.gov/docs/ML2435/ML24355A104.pdf>

⁸ Adams, A. "The Application of a Graded Approach in the Regulation of Research and Test Reactors at the U.S. Nuclear Regulatory Commission." IAEA International Conference on Research Reactors: Safe Management and Effective Utilization. 11/19/2015. <https://conferences.iaea.org/event/75/contributions/10756/contribution.pdf>

⁹ See, for example: Hardesty, D. "Use of a Graded Approach in the Application of Regulatory Inspection Programmes" <https://www.nrc.gov/docs/ML1513/ML15134A490.pdf>

¹⁰ For further detail, see: <https://www.nrc.gov/materials/miau/general-use.html>.