COMMENTS OF ATTORNEYS GENERAL OF NEW MEXICO, CALIFORNIA, DELAWARE, ILLINOIS, MARYLAND, MASSACHUSETTS, OREGON, VERMONT, WASHINGTON, AND THE DISTRICT OF COLUMBIA

June 15, 2026

Via Electronic Submission
The Honorable David A. Wright, Chairman
Nuclear Regulatory Commission
Washington, DC 20555-0001

Re: Licensing Requirements for Microreactors and Other Reactors With Comparable Risk Profiles, 91 Fed. Reg. 23,628 (May 1, 2026).

Docket ID No. NRC-2025-0379

Dear Chairman Wright:

The Offices of the Attorneys General of New Mexico, California, Delaware, Illinois, Maryland, Massachusetts, Oregon, Vermont, Washington, and the District of Columbia ("the States") submit these comments on the Nuclear Regulatory Commission's ("NRC" or "Commission") proposed rulemaking, *Licensing Requirements for Microreactors and Other Reactors With Comparable Risk Profiles*, 91 Fed. Reg. 23,628 (May 1, 2026) ("Proposed Rule"), which the NRC published in the Federal Register on May 1, 2026.

The States recognize the role that nuclear energy may play in providing non-fossil fuel energy that can power technological advances and help ensure reliability given unprecedented strains on our national power grid. The States also recognize that new licensing pathways are needed for developing new technologies, and commend the NRC for attempting to encourage innovation in advanced nuclear licensing. At the same time, the NRC may not abandon the fundamental mandate Congress assigned it under the Atomic Energy Act (AEA) to provide reasonable assurance of adequate protection of the public health and safety, promote the common defense and security, and protect the environment. Nor should it undermine the slogan it prominently and proudly asserts on its publications: "Protecting People and the Environment."

The States emphasize that many of the technologies and microreactor designs to be licensed under this Rule—including unspecified, undefined reactors with "comparable risk profiles" that may also qualify—are largely untested and experimental. Absent the NRC's application of rigorous safety reviews according to technically appropriate and explicit standards, the States will bear the brunt of potentially significant impacts. The States' public health and environmental and natural resources will become the testing ground for these technologies, and the States' residents and workforces will be the first line of defense in responding to radiological releases.

The NRC has long sought to carefully and thoroughly review nuclear reactors through the licensing process. However, the States are concerned that the NRC may be moving away from this historical practice by proposing an expedited licensing track for the mass-production of experimental microreactor technologies. This expedited review would likely yield insufficient environmental review and fewer safety and security requirements than conventional reactors. The

States are also concerned that the rapid deployment of microreactors will exacerbate the long-standing problem of where and how to store and dispose of spent nuclear fuel. Without significant planning, funding, and coordination with States, tribes, and local governments, the increased transportation of microreactors already loaded with fuel, and ultimately spent nuclear fuel, will expose communities and transportation workers to increased radiation doses from the transport of small-scale nuclear reactors and fuel handling, storage, and disposal.

Given this outlook, the States urge the NRC to reconsider several aspects of this Proposed Rule to support the development of nuclear power in a technologically sound way. The NRC must continue to uphold and apply the conservative design features and safety requirements that have been the hallmark of NRC licensing for decades. At minimum, the NRC must revise the Rule to give explicit technical parameters and safety design features for each of the fuel types and designs for which the NRC anticipates receiving license applications, and sufficiently explain and justify these designs and parameters on the record. It is not enough for an agency tasked with protecting the environment and the public to abdicate important decisions and standards to the industry it is supposed to regulate. The Proposed Rule abdicates to industry the NRC's core regulatory function: setting the objective standards against which reactor designs are evaluated. Rather than prescribing the technical parameters, acceptance criteria, quality assurance requirements, and design standards that applicants must satisfy, the Proposed Rule allows each applicant to select its own definitions, propose its own quality assurance program, select its own design standard, and choose the license pathway it prefers. Under the proposed Part 57, every new license application will be decided on an ad-hoc, case-by-case basis, with few objective benchmarks against which the States, or any other interested parties or stakeholders can assess whether the proposed design meets the AEA's adequate protection standard.

The NRC has historically recognized the States as partners in the development of nuclear power. However, the Proposed Rule's general license and generic finality provisions will compromise the States' ability to protect their natural resources and residents because it gives inadequate notice given the geographically widespread deployment of the number microreactors it contemplates. The Proposed Rule's generic finality provisions purport to insulate microreactor designs approved under this framework from future challenges, but the Proposed Rule lacks the procedural and substantive rigor the NRC applies to generic determinations under other licensing pathways.

Troublingly, beyond two entry criteria for this licensing pathway, the Proposed Rule provides little in the way of specific, technical guidance or parameters for industry to ensure that the variety of technologies, fuel types, fuel loads, and burnup rates that could be encompassed under this license pathway will be safely deployed, transported, and decommissioned. If the NRC does not yet have the technological knowledge and expertise to explicitly specify the design and safety criteria that each type of microreactor design and fuel type requires to safely operate, then the NRC must slow down the licensing process, rather than speed it up, and err on the side of applying more conservative, rather than more relaxed standards, until it acquires that expertise.

Additionally, the NRC has failed to consider alternatives to its Proposed Rule beyond the "No Action" alternative and proposes a categorical exclusion from environmental review under the National Environmental Policy Act (NEPA) for an entire class of untested, commercially unproved reactor technologies—an exclusion the States oppose as legally impermissible. Nor has

the NRC considered any economic or environmental impacts on the States, focusing on the benefit to industry, rather than the cost to the public.

This rulemaking comes in the midst of several significant changes in nuclear regulations by the NRC, the Department of Energy (DOE), and the Department of Defense (DOD). The Proposed Rule fails to examine the cumulative effects of all of the recent and pending regulatory changes in this arena, and thus fails to give the States—many of which are Agreement States—sufficient notice of how the States' regulatory and enforcement activities will be affected.

As explained more fully below, the Proposed Rule: (i) violates the AEA's adequate protection mandate; (ii) violates the Administrative Procedure Act's requirements for reasoned decision-making; (iii) violates statutory notice requirements; (iv) violates NEPA's environmental review obligations; (v) fails to analyze the costs and economic burden to States, tribes, and local governments; (vi) fails to address spent nuclear fuel storage; and (vii) fails to perform any cumulative effects of regulation analysis for the seven concurrent or pending major nuclear regulatory changes with which Part 57 interacts.

The NRC should reconsider and revise the Proposed Rule to meet its statutory obligations, including its obligations to protect the environment and the public. The NRC must revise the rule to provide sufficient analysis and justification of the changes it wishes to make, and give a full analysis of the cumulative effects and interactions of Part 57 with other recent and pending rulemakings. The NRC should also withdraw the proposed categorical exclusion. At a minimum, the agency should extend or reopen the comment period to allow sufficient time for the public to thoroughly vet this proposal.

SUMMARY OF PROPOSED RULE

The Proposed Rule creates a lightning-fast licensing track for manufacturers and operators of microreactors and other reactors with "comparable risk profiles," aiming to reduce license time to as little as six months. Though the NRC has published a general definition of "microreactor" in guidance and other publications,[1] it has not included a regulatory definition of "microreactor" in this rulemaking, and has not defined or offered guidance on what reactors with "comparable risk profile[s]" might be.[2]

Instead, the Proposed Rule proposes two entry criteria that a design must satisfy before being eligible for Part 57 licensing on a streamlined, expedited pathway. First, an applicant must demonstrate that its reactor design meets a dose-based entry criterion of 1 rem (10 millisieverts) total effective dose equivalent (TEDE) under accident conditions, as established in proposed

[1] The Nuclear Regulatory Commission (NRC) has not adopted a regulatory definition of "microreactor" in the Code of Federal Regulations; instead, the agency has referenced microreactor characteristics in staff materials such as the NRC's Microreactors webpage: NRC, *Microreactors*, https://www.nrc.gov/reactors/new-reactors/advanced/microreactors.html (last visited June 15, 2026), and in the preamble to the proposed Part 57 rulemaking, *Licensing Requirements for Microreactors and Other Reactors With Comparable Risk Profiles*, 91 Fed. Reg. 23,628 (May 1, 2026). Congress separately defined "micro-reactor" in statute at 42 U.S.C. § 18751 (2024) ("The term 'micro-reactor' means an advanced nuclear reactor that has an electric power production capacity that is not greater than 50 megawatts.").

[2] Unless otherwise stated, this Comment uses the term "microreactors" to include nuclear reactors that the NRC may license under Part 57 because the NRC may determine that it has a "comparable risk profile" to microreactors.

§ 57.25(a). *See* 91 Fed. Reg. at 23,628. Second, an applicant must limit eligible designs to those with a total inventory of special nuclear material (SNM)—comprising thorium, uranium, and plutonium combined—not exceeding 10 metric tons of heavy metal (MTHM).[3] *Id.*

These two entry criteria enable licensees to take advantage of a host of sweeping regulatory changes: the ability to define and pick the regulatory track that makes the most business sense; the ability to prove it meets the entry criteria according to more or less stringent standards; fewer safety and security requirements; reduced backfit requirements for design departures and defects; and reduced financial assurance with the ability to bundle multiple reactors into the same financial assurance level.

Applicants under the new Part 57 need only "provide information that demonstrates that the nuclear reactor or nuclear plant design has [the following] design criteria attributes": (i) Reactivity control; (ii) Heat Removal; (iii) Fission product Retention; (iv) Shielding; (v) Radioactive Effluents Control; and (vi) Security by Design.[4]

Additionally, proposed subpart K includes a categorical exclusion from the National Environmental Policy Act's environmental review requirements for microreactors that meet a set of criteria. As explained more fully below, Proposed Part 57 suffers from fatal flaws under the Atomic Energy Act, Administrative Procedure Act, Price-Anderson Act, and National Environmental Policy Act. Further, the NRC fails to follow its own rulemaking guidance or OMB regulations requiring it to conduct a full cost-benefit analysis that considers costs and risks to States, tribes, and local governments, not just benefits to industry.

BACKGROUND

I. STATUTORY BACKGROUND

A. Atomic Energy Act of 1954

Congress first addressed the civilian nuclear energy development in the Atomic Energy Act of 1946, Pub. L. 79–585, 60 Stat. 755. The current statutory framework governing NRC licensing was established by the Atomic Energy Act of 1954, Pub. L. 83-703, 68 Stat. 919, codified at 42 U.S.C. §§ 2011 *et seq.*, which superseded the 1946 Act and remains the operative statutory authority for all of the NRC's licensing and safety mandates discussed herein.

Most relevant here, under the AEA, the NRC may not issue a license for use of nuclear material unless the licensee can "provide adequate protection to the health and safety of the

[3] MTHM is used to include fuels that contain metals other than Uranium. If the fuel is solely Uranium, the unit of measure is MTU. Although the Proposed Rule does not define "metric tons of heavy metal (MTHM)," DOE and NRC fuel-cycle accounting conventions treat 1 MTU as equivalent to 1 MTHM when the fuel consists solely of Uranium. *See, e.g.*, Shan Peters, Joe T. Carter & Kaushik Banerjee, *Spent Nuclear Fuel and Reprocessing Waste Inventory*, FCRD-NFST-2013-000263, Rev. 9, PNNL-33938, at 1 n.1 (U.S. Dep't of Energy, Office of Nuclear Energy, Nov. 2022) ("Metric ton of heavy metal (MTHM) is the standard unit for measuring nuclear fuel mass; heavy metal refers to elements with atomic number greater than 89—i.e., thorium, uranium, and plutonium—and for uranium fuel, MTHM is equivalent to metric tons of uranium (MTU)."), https://www.osti.gov/biblio/1974547 .

[4] 91 Fed. Reg. at 23,730 (outlining proposed § 57.30).

public."[5] Importantly, the NRC's "primary" mandate—to ensure the adequate protection of public health and safety—has been untouched by subsequent amendments to the AEA.[6]

The AEA authorizes the NRC to issue licenses for nuclear utilization and production facilities under several pathways. AEA Section 101, 42 U.S.C. § 2131, prohibits any person from acquiring, transferring, or using special nuclear material or operating a utilization or production facility except pursuant to a license issued by the Commission. AEA Section 103, 42 U.S.C. § 2133, authorizes the NRC to issue commercial licenses for the utilization or production of special nuclear material for industrial or commercial purposes, subject to the adequate-protection standard in AEA Section 182(a), 42 U.S.C. § 2232(a). ADVANCE Act Section 208 expressly directs the NRC to develop strategies to license and regulate microreactors "pursuant to section 103 of the [AEA]"— i.e., the AEA's commercial licensing provision—without creating any new licensing authority or exemption from AEA Section 182(a).[7] Proposed Part 57 is the NRC's implementation of this ADVANCE Act Section 208 directive and is accordingly governed by every safety and procedural requirement that attaches to AEA Section 103 commercial licenses, including AEA Section 182(a)'s adequate-protection standard.

B. Price-Anderson Act of 1957

The Price Anderson Nuclear Industries Indemnity Act of 1957 ("Price-Anderson Act") amended the AEA "to protect the public and to encourage the development of the atomic energy industry,"[8] by "establish[ing] a public/private insurance pool covering potential victims of peace-time nuclear accidents."[9] Amended several times since its enactment, the Price-Anderson Act requires commercial nuclear power operators to "have and maintain primary financial protection equal to the maximum amount of liability insurance available from private sources."[10] Beyond that maximum, operators' liability is capped, and the federal government will cover a portion of damages.[11]

As explained more fully below, the Proposed Rule does not explain how licensees under proposed Part 57 will be governed by the Price-Anderson Act, or how liability for accidents will be shared between the manufacturing, construction, or operating licensees.

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[5] 42 U.S.C. § 2232(a).

[6] *See Union of Concerned Scientists v. U.S. Nuclear Regulatory Commission*, 824 F.2d 108, 109 (1987) ("Section 182(a) of the [AEA] provides the primary statutory standard relating to the Commission's mandate to ensure the safe operation of nuclear power plants."); *see also* ADVANCE Act, Pub. L. No. 118-67, div. B, § 501(a), 138 Stat. 1448, 1514 (2024) (directing NRC mission reforms only "while remaining consistent with the policies of the Atomic Energy Act of 1954 . . . including to provide reasonable assurance of adequate protection of the public health and safety"); 170 Cong. Rec. S4130 (daily ed. June 18, 2024) (statement of Sen. Carper) ("[T]he ADVANCE Act does not in any way alter the [NRC]'s longstanding statutory responsibility to protect public health, safety, and the environment."); NEIMA, Pub. L. No. 115-439, 132 Stat. 5565 (2019) (directing new licensing framework but not amending AEA § 182(a) or § 11(cc)).

[7] *See* Pub. L. No. 118-67, § 208, 138 Stat. 1448, 1511 (2024).

[8] 42 U.S.C. § 2012(i).

[9] *Smith v. Gen. Elec. Co.*, 938 F. Supp. 70, 73 (D. Mass. 1996).

[10] 42 U.S.C. § 2210(b)(1).

[11] 42 U.S.C. § 2012(i) ("In order to protect the public and to encourage the development of the atomic energy industry, in the interest of the general welfare and of the common defense and security, the United States may make funds available for a portion of the damages suffered by the public from nuclear incidents, and may limit the liability of those persons liable for such losses.").

C. The Hobbs Act of 1966

In the 1966 Hobbs Act, Congress directed that "[a]ny party aggrieved by [a] final order [of the NRC] may, within 60 days after its entry, file a petition to review the order in the court of appeals wherein venue lies." 28 U.S.C. § 2344; *see* 28 U.S.C. § 2342(4) (applying court of appeals jurisdiction to "final orders" of the Atomic Energy Commission, now the NRC).

D. Energy Reorganization Act of 1974

The NRC's licensing and regulatory authority for commercial nuclear reactors derives from the Atomic Energy Act of 1954.[12] The Energy Reorganization Act of 1974, Pub. L. 93-438, 88 Stat. 1233, transferred these functions from the former Atomic Energy Commission to the newly established Nuclear Regulatory Commission.[13]

E. Nuclear Energy Innovation and Modernization Act of 2019

In 2019, Congress enacted the Nuclear Energy Innovation and Modernization Act (NEIMA) to, as relevant here, "to develop the expertise and regulatory processes necessary to allow innovation and the commercialization of advanced nuclear reactors." Pub. L. 115-439.

F. ADVANCE Act of 2024

In 2024, Congress enacted the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act, Pub. L. No. 118-67, 138 Stat. 1448 (2024) (ADVANCE Act). The ADVANCE Act amends specific provisions of the AEA and adds new statutory directives, including the following key provisions relevant to this rulemaking:

- Licensing Reform: Section 103 directs the NRC to streamline its licensing processes for advanced reactors, targeting faster review timelines without weakening safety standards.
- Mission Alignment: Title V directs the NRC to undertake a broad review and revision of its regulations and guidance to identify opportunities to eliminate, streamline, consolidate, or otherwise improve requirements that are outdated, unnecessary, or unnecessarily burdensome, particularly where such requirements do not meaningfully contribute to safety, security, or environmental protection. The provision reflects Congress's intent that the NRC modernize its regulatory framework while maintaining its statutory obligations.
- Microreactor Strategies: Section 208 explicitly requires the NRC to develop "risk-informed and performance-based strategies and guidance to license and regulate microreactors," and mandates those strategies be incorporated into an existing or new regulatory framework by July 2027. This is the direct statutory mandate driving the proposed Part 57 rulemaking.
- Fee reform: The ADVANCE Act makes changes to NRC fee recovery provisions to reduce barriers for small and advanced reactor applicants.
- Workforce and international cooperation provisions: The Act addresses NRC staffing and authorizes expanded international nuclear cooperation, but these do not alter the AEA's core regulatory structure.

[12] *See* AEA § 101, 42 U.S.C. § 2131 (license required); AEA § 103, 42 U.S.C. § 2133(a) (authorizing NRC to issue licenses for utilization and production facilities "for industrial or commercial purposes"); AEA § 182(a), 42 U.S.C. § 2232(a) (adequate protection standard).

[13] *See* 42 U.S.C. § 5842(1)-(2).

Although the ADVANCE Act directs the NRC to streamline processes and create new frameworks, it does not supersede or diminish the underlying statutory obligations that bind the Commission as a matter of law.[14] The AEA's Section 182(a) requirement that license applications contain sufficient information for the NRC to make its safety findings remains in force and is not waivable by the ADVANCE Act. Likewise, the AEA's adequate-protection standard remains the non-delegable regulatory floor below which the NRC cannot reduce safety requirements regardless of congressional directives promoting efficiency or deployment. Further, statutory definitions contained within the AEA, including the Section 11(cc) definition of "utilization facility"—which the proposed Part 57 preamble addresses at length—remain binding on the Commission and cannot be modified through rulemaking. Accordingly, the ADVANCE Act should be understood as directing the NRC to achieve greater regulatory efficiency and predictability while continuing to satisfy the safety, security, environmental protection and legal requirements established by the AEA.

G. Administrative Procedure Act

Under the Administrative Procedure Act (APA), an agency action is unlawful if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with [the] law" or "without observance of procedure required by law."[15] To comply with the APA, an agency "must examine the relevant data and articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made.'"[16] An agency rule is arbitrary and capricious "if the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise."[17] When an agency action represents a change in policy or interpretation, the agency must provide a rational explanation for that change.[18] The agency must demonstrate that the new rule "is permissible under the statute, that there are good reasons for it, and that the agency believes it to be better, which the conscious change of course adequately indicates."[19]

The APA requires that a notice of proposed rulemaking contain "either the terms or substance of the proposed rule or a description of the subjects and issues involved,"[20] and afford "interested persons an opportunity to participate in the rule making through submission of written data, views, or arguments."[21] An agency violates APA Section 553 when its notice fails to "fairly apprise interested persons of the subjects and issues before the Agency"[22] or when the final rule is not a "logical outgrowth" of the proposal such that interested parties could have anticipated it and

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[14] ADVANCE Act, Pub. L. No. 118-67, div. B, § 501(a), 138 Stat. 1448, 1514 (2024) (directing NRC mission updates and efficiency measures only "while remaining consistent with the policies of the Atomic Energy Act of 1954 . . . including to provide reasonable assurance of adequate protection of the public health and safety.").

[15] 5 U.S.C. § 706(2)(A), (D).

[16] *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (quotation omitted).

[17] *Id.*

[18] *F.C.C. v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009).

[19] *Id.*

[20] 5 U.S.C. § 553(b)(3).

[21] *Id.* § 553(c).

[22] *Nat. Res. Def. Council v. E.P.A.*, 279 F.3d 1180, 1186 (9th Cir. 2002) (citation omitted).

had a meaningful opportunity to comment.[23] Where a final rule differs materially from the proposed rule—whether in its substantive terms or in the technical predicate on which it rests—it must be re-proposed for additional comment.[24]

H. National Environmental Policy Act

The National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321–4347, has long supported informed and transparent agency decision-making and allowed for meaningful public participation in developing and reviewing proposed federal actions. Congress enacted NEPA to advance a national policy of environmental protection by requiring federal agencies to conduct thorough and careful review of their actions' environmental impacts. NEPA does this through a requirement that agencies consider the "reasonably foreseeable environmental effects of the proposed agency action" and a "reasonable range of alternatives" *before* taking action.[25] As the Supreme Court has explained, Congress intended NEPA's "action-forcing procedures" to help "[e]nsure that the policies [of NEPA] are implemented."[26] By requiring thorough environmental review ahead of significant federal actions, NEPA has helped regulatory agencies and the American people evaluate and understand how such projects impact the environment and public health.

The States have a strong interest in robust NEPA compliance and the significant opportunities under NEPA for public participation in order to protect their residents, property, and natural resources from ill-informed decision making at the federal levels. The States also have a quasi-sovereign interest in preventing harm to the health of our natural resources and ecosystems in seeking redress for environmental harms within our borders.[27] The States and our residents are injured by the effects of environmental degradation resulting from ill-informed agency actions.

The NRC codified its NEPA implementing regulations at 10 C.F.R. §§ 51.10-51.125 in March 1984.[28] The regulations have been updated several times since, most recently on March 30, 2026, when the NRC published a final rule expanding and reorganizing its categorical exclusions at 10 C.F.R. § 51.22, effective April 29, 2026.[29] That rulemaking restructured § 51.22 by grouping exclusions according to threshold criteria, rather than by the form of NRC approval, eliminated the "no significant hazards consideration" proxy that had governed routine reactor license amendments since 1986, and added new exclusions for a broad range of licensing and administrative actions the Commission determined to have no individually or cumulatively

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[23] *Long Island Care at Home, Ltd. v. Coke*, 551 U.S. 158, 174 (2007).

[24] *United Mine Workers of Am. v. Mine Safety & Health Admin.,* 626 F.3d 84, 94 (D.C. Cir. 2010).

[25] 42 U.S.C 4332(2)(C)(i), (iii).

[26] *Andrus v. Sierra Club*, 442 U.S. 347, 350 (1979) (quoting S. Rep. No. 91-296, at 19 (1969)); *see also Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989) ("Simply by focusing the agency's attention on the environmental consequences of a proposed project, NEPA ensures that important effects will not be overlooked or underestimated, only to be discovered after resources have been committed or the die otherwise cast.").

[27] *Massachusetts v. EPA*, 549 U.S. 497, 520 (2007).

[28] NRC, *Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions and Related Conforming Amendments*, 49 Fed. Reg. 9352, 9381-9406 (Mar. 12, 1984).

[29] NRC, *Categorical Exclusions From Environmental Review*, 91 Fed. Reg. 15,519 (Mar. 30, 2026) (final rule, effective Apr. 29, 2026) (amending 10 C.F.R. § 51.22), corrected by 91 Fed. Reg. 18,772 (Apr. 13, 2026) (correcting conflicting amendatory instructions for § 51.22 arising from simultaneous publication of Part 53 final rule). The companion Part 53 final rule is *Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors*, 91 Fed. Reg. 15,696 (Mar. 30, 2026).

significant environmental effect.

The March 2026 categorical exclusion rule also updated NEPA statutory cross-references to reflect the renumbering enacted by the Fiscal Responsibility Act of 2023, Pub. L. No. 118-5, 137 Stat. 10. Following enactment of the Fiscal Responsibility Act and issuance of Executive Order 14300,[30] which directed a wholesale revision of NRC regulations, the Commission approved a Staff Requirements Memorandum on July 28, 2025, directing staff to initiate a consolidated rulemaking that will, among other things: (1) eliminate or narrow the prescriptive mandatory Environmental Impact Statement (EIS) requirement in 10 C.F.R. § 51.20(b); (2) revise purpose-and-need statement scope to limit alternatives analysis to actions within the NRC's regulatory authority; (3) authorize applicants to prepare draft environmental documents subject to NRC oversight; and (4) implement broader process efficiency measures including bifurcated application submittals and clearer acceptance criteria.[31] That consolidated rulemaking is projected for completion by January 2029.[32] Pending its completion, both the March 2026 categorical exclusion amendments and any intervening guidance measures will govern the scope of environmental review obligations applicable to licensing proceedings under the current regulatory framework, including those initiated under proposed 10 C.F.R. Part 57 and the recently finalized Part 53.[33]

I. Unfunded Mandates Reform Act

The purpose of the Unfunded Mandates Reform Act (UMRA) is "to end the imposition, in the absence of full consideration by Congress, of Federal mandates on State, local, and tribal governments without adequate Federal funding, in a manner that may displace other essential State, local, and tribal governmental priorities."[34] Under the UMRA, a federal agency must "assess the effects of Federal regulatory actions on State, local, and tribal governments."[35] UMRA requires that if a federal action will impose $100,000,000 or more on all State, local, and tribal governments "in the aggregate . . . in any 1 year," then the agency must undertake a "qualitative and quantitative assessment of the anticipated costs and benefits of the Federal mandate, including the costs and benefits to State, local and tribal governments . . . as well as the effect of the Federal mandate on health, safety, and the natural environment."[36]

II. FACTUAL BACKGROUND

A. Nuclear Energy in the United States

Nuclear energy is an important part of the energy mix in many of the States. For instance, Washington State has one nuclear power plant, the Columbia Generating Station, which is the third

[30] Executive Order 14300, *Ordering the Reform of the Nuclear Regulatory Commission* § 2, 90 Fed. Reg. 22,587 (May 29, 2025).

[31] *See* NRC, *Staff Requirements Memorandum, SECY-24-0046: Implementation of the Fiscal Responsibility Act of 2023 National Environmental Policy Act Amendments* (July 28, 2025), ADAMS Accession No. ML25214A050.

[32] *See* NRC, *Modernization of Nuclear Reactor Environmental Reviews, Supporting Material for SECY-24-0046* at 3, ADAMS Accession No. ML24290A159.

[33] NRC, *Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors*, 91 Fed. Reg. 15,793 (Mar. 30, 2026).

[34] 2 U.S.C. § 1501(2).

[35] 2 U.S.C. § 1531.

[36] 2 U.S.C. § 1532(a)(2).

largest single power production facility in the state.[37] The Washington State Legislature allocated $25 million in 2025 to advance the development of small modular reactors for power generation.

As another example, California has one operating nuclear facility in California, PG&E's Diablo Canyon Power Plant, is a two-unit, 2,256-megawatt pressurized water reactor complex.[38] Diablo Canyon's twin reactors generate approximately 18,000 gigawatt-hours (GWh) of electricity annually, which is about 9% of California's total in-state electricity generation and roughly 15% of the state's carbon-free power supply.[39] Originally scheduled for retirement in 2024 and 2025 under a 2016 closure agreement, Diablo Canyon's operating life was extended by California legislation signed in 2022,[40] and on April 2, 2026, the NRC issued Renewed Facility Operating License Nos. DPR-80 and DPR-82, extending federal authorization for Unit 1 through November 2, 2044, and Unit 2 through August 26, 2045.[41] However, under state law, the plant may only operate until 2030 and further state legislation would be needed to extend operations beyond that time.

Although New Mexico does not generate nuclear power, it is the only state which handles nuclear material from cradle to grave. In addition to legacy impacts from the Manhattan Project and uranium mining, New Mexico hosts the Waste Isolation Pilot Plan ("WIPP"), where transuranic waste is interred, as well as two National Laboratories which conduct significant nuclear weapons and energy research.[42] Any fast-track licensing of microreactors and other advanced nuclear reactors, whether in a categorical exclusion or not, would likely accelerate the development of such technology in New Mexico. Further, New Mexico has been identified as a potential location for the "interim" storage of spent nuclear fuel from reactors. The license for a future interim storage facility to be constructed and managed by Holtec International lists New Mexico as its host state.[43]

The exponential increase in deployment of nuclear reactors that this rule would incentivize is likely to create much more nuclear waste, adding to the decades-long problem of where to store such waste. Developers are proposing to use advanced nuclear reactors (of which microreactors are a subset) in New Mexico for the desalination of produced water in oil and gas fields and from deep, ancient aquifers to combat drought.[44] New Mexico has also become the chosen state for

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[37] Energy Northwest, *Columbia Generating Station | Nuclear Power for a Carbon-Free Future*, https://www.energy northwest.com/energy-projects/columbia-generating-station (last visited March 3, 2026).

[38] *See* NRC, *Pacific Gas & Electric Co.; Diablo Canyon Nuclear Power Plant, Units 1 and 2; License Renewal and Record of Decision*, 91 Fed. Reg. 17,310 (Apr. 6, 2026) (NRC Docket Nos. 50-275 and 50-323).

[39] *See* U.S. Energy Info. Admin., *The United States operates the world's largest nuclear power plant fleet* (Apr. 24, 2025), https://www.eia.gov/todayinenergy/detail.php?id=65104 ("In 2024, the electricity produced at Diablo Canyon accounted for 9% of California's total electricity generation"); U.S. Dep't of Energy, *Civil Nuclear Credit Program: January 2024 Cycle 1 Award Finalized* (Jan. 17, 2024), https://www.energy.gov/node/4819016 (noting Diablo Canyon "provides 9% of the total California power generation" and "approximately 15% of the state's clean energy").

[40] *See* Cal. Pub. Util. Comm'n Decision 23-12-054 (Dec. 14, 2023).

[41] *See* 91 Fed. Reg. 15,082, 15,082–83 (Apr. 6, 2026).

[42] DOE, *Waste Isolation Pilot Plant*, https://www.wipp.energy.gov/; DOE, *National Nuclear Security Administration Laboratories*, https://www.energy.gov/national-laboratories.

[43] NRC, *Hi-Store Consolidated Interim Storage Facility Independent Spent Fuel Storage Installation Materials License No. SNM-2516* (2023).

[44] *See e.g.*, Natura Resources, *Natura Resources Collaborates with NGL Energy Partners to Enable Large-Scale Produced Water Treatment with Small Modular Nuclear Reactors in the Permian Basin* (Feb. 3, 2026),

several large data center projects, which have also proposed the possibility of using small nuclear reactors.[45] Many advanced nuclear reactors or microreactors would likely have impacts on New Mexico's scarce water resources. The cumulative environmental and human health impacts of past, present, and future nuclear development and waste disposal in New Mexico are already extremely high. Authorizing mass deployment of microreactors with little or no environmental review for the development of advanced nuclear reactors would allow developers to completely sidestep analysis of the impacts of nuclear power generation and waste storage on New Mexico's already burdened population and environment.

The Attorneys General are also well aware of the legacy of environmental impacts from the past use of nuclear technologies. Other than in New Mexico, in Washington State, reactors located at the Hanford site produced plutonium for America's defense program for forty years. Now, the site hosts 14,000 workers cleaning up the hazardous waste left behind. In California, the San Onofre Nuclear Generating Station, shut down in 2013 due to leaks of radioactive steam, retains over 1,650 tons of irradiated fuel on site, waiting for a permanent disposal solution.

B. Agreement States

Including New Mexico, California, Illinois, Maryland, Massachusetts, Oregon, Vermont, and Washington, there are forty Agreement States with the NRC.[46] This means that these States have entered into agreements with the NRC giving them the "authority to license and inspect byproduct, source, or special nuclear materials used or possess within their borders."[47] As such, Proposed Part 57 may affect the Agreement States' materials licensing jurisdiction and enforcement activities, particularly if materials are co-located at proposed microreactor sites. However, as explained below, the Proposed Rule contains no analysis of how Agreement States' jurisdiction, regulatory, and enforcement activities may be affected.

C. Microreactors Currently Deployed

The microreactor technologies contemplated in this Proposed Rule have yet to be deployed commercially[48] and, as characterized by the U.S. Energy Information Administration, are "currently under development."[49] The most advanced privately-operated microreactor demonstration in the United States, Antares Nuclear's Mark-0 sodium heat pipe-cooled reactor, achieved only zero-power criticality at Idaho National Laboratory on June 4, 2026, confirming basic nuclear physics but generating no electricity, and remains years from commercial operation.[50] Regulation of commercial microreactors therefore remains a speculative endeavor.

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https://www.naturaresources.com/natura-resources-collaborates-with-ngl-energy-partners-to-enable-large-scale-produced-water-treatment-with-small-modular-nuclear-reactors-in-the-permian-basin.

[45] *See, e.g.*, Power, *Nuclear, Natural Gas Power Generation Planned for Massive New Mexico Data Center Site* (Nov. 7, 2025), https://www.powermag.com/nuclear-natural-gas-power-generation-planned-for-massive-new-mexico-data-center-site/.

[46] *See* 42 U.S.C. § 2021(b); NRC, *Agreement States*, https://www.nrc.gov/agreement-states.

[47] *Id.*; NRC, *Agreement State Program*, https://www.nrc.gov/about-nrc/state-tribal/agreement-states

[48] Idaho National Laboratory (INL), *Trending Topics: Microreactors*, https://inl.gov/trending-topics/microreactors/ (last visited June 8, 2026).

[49] U.S. Energy Information Administration, *Small modular reactors and microreactors under development in the United States*, https://www.eia.gov/todayinenergy/detail.php?id=67584 (last visited June 8, 2026).

[50] *See* U.S. Dep't of Army, *DOE and Army Reach Milestone on Advanced Microreactors* (June 8, 2026), https://www.militaryspot.com/news/doe-and-army-reach-milestone-on-advanced-microreactors (confirming June 4,

Non-commercial microreactor pilot projects and demonstration programs in the U.S. are advancing on three programmatic tracks. At Idaho National Laboratory (INL), DOE's Microreactor Applications Research Validation and Evaluation (MARVEL) project, an 85-kilowatt thermal, sodium-potassium-cooled microreactor received Preliminary Documented Safety Analysis (PDSA) approval in March 2026, with assembly scheduled for completion in 2026, dry criticality anticipated in 2027, and full-power operations targeted for 2028.[51] Project Pele, a transportable high-temperature gas-cooled microreactor (1–5 MWe) developed by BWX Technologies under sponsorship of the Department of Defense's Strategic Capabilities Office, received its first TRISO fuel delivery at INL in November 2025 and is targeted for first operations in 2027–2028.[52] The most consequential new programmatic development is the DOE Reactor Pilot Program, which created a DOE authorization pathway separate from NRC licensing enabling private companies to test advanced reactor designs outside national laboratories, with a target of achieving criticality in at least three designs by July 4, 2026. DOE selected eleven projects from ten private companies for the program.[53] Two participants met the criticality target ahead of schedule: Valar Atomics, which achieved zero-power criticality of its NOVA core at Los Alamos National Laboratory in November 2025, and Antares Nuclear, which achieved zero-power criticality of its Mark-0 sodium heat pipe-cooled microreactor at INL on June 4, 2026.[54] On the military installation side, the Army's Janus Program aims to commence operation of an Army-regulated nuclear reactor at a domestic military installation no later than September 30, 2028.[55]

THE STATES' CONCERNS WITH THE PROPOSED RULE

I. The Proposed Rule Violates the Atomic Energy Act.

The Proposed Rule violates key provisions of the Atomic Energy Act (AEA) by: (i) failing to satisfy the AEA's adequate protection mandate; (ii) creating a function equivalent of a general license for utilization facilities in violation of the AEA's prohibition; and (iii) doing so without the benefit of the deference the AEA reserves for expert agency judgment, which the NRC has forfeited here.

2026 criticality milestone under DOE Reactor Pilot Program, not commercial operation); Matthew Daly, *Energy Department says advanced nuclear reactor first to reach critical milestone,* PBS News, https://www.pbs.org/newshour/nation/energy-department-says-advanced-nuclear-reactor-first-to-reach-critical-milestone (last visited June 8, 2026).

[51] *See* INL, DOE Approves Safety Documentation for MARVEL Microreactor Initial Criticality (Mar. 11, 2026), https://inl.gov/news-release/doe-approves-safety-documentation-for-marvel-microreactor-initial-criticality/.

[52] See INL, INL Advances Department of War's Project Pele Demonstration Microreactor with First TRISO Fuel Delivery (Nov. 2025), https://inl.gov/news-release/inl-advances-department-of-wars-project-pele-demonstration-microreactor-with-first-triso-fuel-delivery/.

[53] *See* U.S. Dep't of Energy, *Department of Energy Announces Initial Selections for New Reactor Pilot Program* (Aug. 12, 2025), https://www.energy.gov/articles/department-energy-announces-initial-selections-new-reactor-pilot-program.

[54] *See* U.S. Dep't of Army, *DOE and Army Reach Milestone on Advanced Microreactors* (June 8, 2026), https://www.militaryspot.com/news/doe-and-army-reach-milestone-on-advanced-microreactors.

[55] *See* Partnership for Global Security, *Military Installations for Department of Defense Advanced Reactor Programs* (May 8, 2026), https://partnershipforglobalsecurity.org/military-installations-for-department-of-defense-advanced-reactor-programs/.

A. The Proposed Rule Violates the AEA's Adequate Protection Mandate.

Section 182 of the AEA requires the NRC to ensure that any "utilization or production of special nuclear material . . . will provide adequate protection to the health and safety of the public."[56]

The Proposed Rule's discussion foregrounds the purported need for "[r]apid and high-volume deployment of microreactors and modular reactors . . . to support national policy and market demand."[57] But the Proposed Rule and draft Regulatory Analysis contain little assurance that the NRC is continuing to prioritize its primary mandate to ensure adequate public health and safety. Citing market demand and top-down policy directives, it describes the new framework as "based on simplified safety requirement[s]" that would "maximize the benefits of standardization."[58] For sure, the Proposed Rule touts the standardization benefits that would inure to industry: "shorter licensing timeframes" that require the industry to expend "fewer resources" than they have previously to license standard nuclear power reactors. *Id.* But it offers little comfort to those relying on the NRC to fulfill its mandate to protect public safety and the environment.

The NRC's abdication of its duty to protect public health and safety, to the benefit of regulated industry, also stands in contrast to the D.C. Circuit's holding in *Union of Concerned Scientists v. U.S. Nuclear Regulatory Commission*, which is still good law.[59] While the NRC is not prohibited from taking into account economic considerations, it is not allowed to consider those at the expense of safety. The Proposed Rule cites as authority NEIMA and the Advance Act, but neither of those acts abrogate or supersede the AEA's primary mandate to ensure public safety.

The States do not assert that expedited review can never be compatible with Section 182's health and safety mandate in specific instances. But the Proposed Rule and draft Regulatory Analysis must demonstrate, with specificity, how the 6-to-12 month licensing track, and other provisions that reduce time and cost for industry for the mass deployment of untested technologies, including by relaxing safety, security, public health, and environmental standards, are consistent with the AEA's adequate protection mandate.

In the AEA, Congress intended that the NRC regulate industry by setting and enforcing the standards for commercial nuclear production and utilization.[60] Under the APA, too, the NRC must not rely on "factors which Congress has not intended it to consider," nor "entirely fail[] to consider an important aspect of the problem."[61]

Here, the NRC is enacting sweeping changes that delegate to regulated entities functions that should properly belong to the regulator: the ability to define the terms of the regulation, select

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[56] 42 U.S.C. § 2232(a).

[57] 91 Fed. Reg. at 23,631

[58] *Id.*

[59] *Union of Concerned Scientists v. NRC*, 824 F.2d 108, 109 (1987) (explaining that "Section 182(a) of the [AEA] provides the primary statutory standard relating to the Commission's mandate to ensure the safe operation of nuclear power plants" and this standard is referred to by NRC as the "adequate protection" or "undue risk" standard).

[60] *See* AEA Sections 3(e), 101, 103, and 161.

[61] *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (quotation omitted).

safety standards, and pick which licensing track is most appropriate.[62] These delegation problems are independently legally cognizable. The delegation of accident analysis methodology choice violates AEA Section 182(a)'s non-delegable adequate-protection mandate; the delegation of entry criterion definition violates the APA's requirement that the agency establish the terms of its own regulatory framework,[63] and the delegation of the "comparable risk profile" determination provides insufficient notice under the APA, 5 U.S.C. § 553(b)(3).

The Proposed Rule justifies these delegations based on cost savings, efficiency, and speed of license processing: rationales that benefit industry. However, these are not factors that Congress intended the NRC to consider at the expense of public safety and environmental protection.

The NRC's shift in priority manifests in various ways, explained more fully below. In brief, the NRC has relaxed safety design requirements, reduced defense-in-depth layers, eliminated Commission review of design departures and backfit requirements, and provided for generic finality without the corresponding procedural rigor that accompanies such finality in other parts of the Code, and allows industry to self-define and select their quality assurance programs, operator qualifications, and regulatory pathway.

The specific safety, security, technical, and economic concerns that the States raise below in Sections II, V, and VII apply as examples of the States' AEA and statutory arguments regarding the NRC's abdication of its adequate protection mandate, and regulatory role. They are incorporated in this section by reference.

B. The Proposed Rule Violates the AEA's Prohibition on General Licenses for Utilization Facilities.

The Proposed Rule violates the AEA by effectively creating general licenses for the construction activities for microreactors, even though the NRC admits that microreactors are "utilization facilities" as the AEA defines that term, and the AEA prohibits general licenses for utilization facilities.[64]

The AEA defines "utilization facility" at 42 U.S.C. § 2014(cc):

> (cc) The term "utilization facility" means (1) any equipment or device, except an atomic weapon, determined by rule of the Commission to be capable of making use of special nuclear material in such quantity as to be of significance to the common defense and security, or in such manner as to affect the health and safety of the public, or peculiarly adapted for making use of atomic energy in such quantity as to be of significance to the common defense and security, or in such manner as to affect the health and safety of the public; or (2) any important component part

[62] *See* 91 Fed. Reg. at 23,632 (giving industry "flexibility" to "allow applicants to redefine applicable definitions to support their specific design and licensing basis needs," and to "propose, with adequate justification, the use of codes and standards appropriate for their reactor design").

[63] *See Motor Vehicle Mfrs. Ass'n,* 463 U.S. at 43.

[64] *See* 91 Fed. Reg. at 23,643 (outlining proposed § 57.45(d) that would issue general licenses for construction permits); *see also* Comment by Fred Schofer § 1, NRC-2025-0379-0021 ("Schofer Comment") (observing that the NRC "lacks authority to issue general licenses for utilization facilities," and noting that "[t]he layered reductions in oversight embedded in Part 57 nevertheless approximate the same result by effect rather than by name. The Commission should not rely on aggregation of exemptions to reach an outcome the statute prohibits outright.").

especially designed for such equipment or device as determined by the Commission.[65]

The AEA prohibits the use of general licenses for utilization facilities, unless the general license is for the production of "any important component part" of a utilization facility.[66] The NRC claims to use this authority "to issue a general license in proposed § 57.45(d) for construction activities . . . that would ensure that the general license would only be for any important component part especially designed for a utilization facility."[67] The NRC apparently interprets "component" as the nuclear reactor itself, thus allowing for general licenses for the manufacturing of a microreactor.[68]

Although proposed 10 C.F.R. § 57.45 states that "the general licensee must not allow a manufactured reactor to be brought to the site under the general license,"[69] in 2025, the NRC staff recommended that "the Commission take the position that a factory-fabricated micro-reactor with features to preclude criticality would not be 'in operation' when loaded with fuel, which would allow fuel loading at a factory without the need for a facility operating license."[70] This position was approved by the Commission on June 17, 2025.[71]. The NRC is thus redefining when initial loading happens by saying that it no longer occurs when fuel is placed into the reactor, but when criticality-precluding features are removed.[72] So, the NRC contemplates that the microreactor itself may be shipped already loaded with fuel.[73] Under this recommendation, a microreactor could then get shipped to any number of locations based on a general license.

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[65] *See also* 10 C.F.R. § 50.2(1) (defining utilization facility as "[a]ny nuclear reactor other than one designed or used primarily for the formation of plutonium or U–233").

[66] *See* 91 Fed. Reg. at 23,634; 42 U.S.C. § 2014(cc)(2); 42 U.S.C. § 2139(a) (allowing the NRC to "issue general licenses for domestic activities" for component parts of utilization facilities pursuant to § 2014(cc)(2)).

[67] 91 Fed. Reg. at 23,634.

[68] 91 Fed. Reg. at 23,680 ("[T]he NRC considered whether it could use a general license for rapid deployment of the types of reactors described herein." It "concludes that the NRC cannot license entire utilization facilities with a general license because of the limits in the NRC's authority under the AEA," but did conclude the general license for construction for "'nth-of-a-kind' reactors would be permissible."). *See also* NRC, *SECY-24-0008: Micro-Reactor Licensing and Deployment Considerations: Fuel Loading and Operational Testing at a Factory* (ADAMS Accession No. ML23207A252); *see also* Staff Requirements Memorandum, *SRM-SECY-24-0008: Staff Requirements — Micro-Reactor Licensing and Deployment Considerations: Fuel Loading and Operational Testing at a Factory* (June 17, 2025) (ADAMS Accession No. ML25168A133) (Commission approving staff's regulatory strategy for licensing the transport of fueled microreactors from manufacturing facilities to deployment sites).

[69] 91 Fed. Reg. at 23,691.

[70] NRC, *SECY-24-0008: Micro-Reactor Licensing and Deployment Considerations: Fuel Loading and Operational Testing at a Factory* at 2 (ADAMS Accession No. ML23207A250).

[71] Staff Requirements Memorandum, *SRM-SECY-24-0008: Staff Requirements — Micro-Reactor Licensing and Deployment Considerations: Fuel Loading and Operational Testing at a Factory* (June 17, 2025) (ADAMS Accession No. ML25168A133) (Commission approving staff's regulatory strategy for licensing the transport of fueled microreactors from manufacturing facilities to deployment sites).

[72] NRC, *SECY-24-0008: Micro-Reactor Licensing and Deployment Considerations: Fuel Loading and Operational Testing at a Factory* at 11 (ADAMS Accession No. ML23207A250) (stating that "[w]hen features to preclude criticality are present, the NRC staff recommends that the Commission conclude that operation begins with the removal of those features. The NRC staff considers the removal of features to preclude criticality to be the best analogue to initial loading of fuel for reactors without such features . . . .").

[73] 91 Fed. Reg. 23,628, 23,631 (stating that NRC-contemplated deployment models for microreactors include "transporting fueled reactors to deployment sites (loaded with unirradiated or irradiated fuel)").

This interpretation conflicts with the statutory text. The AEA defines a utilization facility as "any equipment or device . . . capable of making use of special nuclear material in such quantity as to be of significance to the common defense and security, or in such manner as to affect the health and safety of the public."[74] A fueled, operable microreactor capable of sustaining a fission chain reaction meets every element of this definition. Characterizing such a reactor as merely a "component part" eligible for § 2139(a) general licensing does not follow from the text. Section 11(cc)(2) defines "important component part especially designed for such equipment" as a potential subject of a general license—but a complete, fueled reactor that constitutes the utilization facility itself cannot logically be characterized as a "component part" of itself. The NRC's interpretation also runs headlong into the aggregation problem. By issuing a general license for the manufacture of the reactor unit, then a general license for construction of certain site activities, then relying on streamlined OL review, the NRC has reconstructed through sequential exceptions the functional equivalent of a general license for the utilization facility—precisely the outcome AEA § 2139(a)'s limitation was designed to prevent.[75]

As noted below, issuing a general license for the manufacture of high-volume microreactors that could be deployed anywhere in the country creates APA and NEPA notice problems. It also means that design defects can propagate quickly in reactors across the country.

The Proposed Rule would also "establish a general license under which an applicant that files a joint application for a [construction permit] and associated [operating licenses] for a 'nth-of-a-kind facility'[76] could begin construction activities before the issuance of a [construction permit]." [77] This pre-construction general license compounds the § 5(f) backfitting problem, discussed below, *see* Section II(C). Under proposed rule § 57.16(a)(1)(i)(A), the NRC's backfit threshold is triggered upon issuance of a construction permit (CP). If construction begins under a general license before a CP is issued, the NRC will have allowed physical construction to commence—and capital expenditures to begin—without the CP proceeding that would trigger formal backfit analysis. This creates a *fait accompli* problem. By the time the CP proceeding occurs and the NRC could demand design changes, the reactor may already be substantially built. E.O. 14300, § 5(f)[78] requires "stringent thresholds" for post-construction design-change demands—but those thresholds are meaningless if construction begins before any threshold-triggering event has occurred. The NRC must explain how the general license for pre-CP construction is consistent with both AEA Section 182(a)'s pre-licensing adequate protection- finding requirement and E.O. 14300 § 5(f)'s post-construction design-change threshold mandate.

To the extent that the NRC is contemplating extending general licenses further in the context of microreactors, per its Question 2-1, the States agree with Connecticut Department of

[74] 42 U.S.C. § 2014(cc)(1).

[75] *See* Schofer Comment § 1, NRC-2025-0379-0021 ("[T]he layered reductions in oversight embedded in Part 57 nevertheless approximate the same result by effect rather than by name. The Commission should not rely on aggregation of exemptions to reach an outcome the statute prohibits outright.").

[76] The NRC defines "nth-of-a-kind" microreactors as "a microreactor of a standard design that has been previously approved by the NRC through a design certification (DC), manufacturing license (ML), or final safety analysis report for a first-of-a-kind (FOAK) combined license (COL) or construction permit and operating license (CP/OL)." NRC, *Nth-of-a-Kind Microreactor Licensing and Deployment Considerations* (March 2025), Adams Accession No: ML2508A142, https://www.nrc.gov/docs/ML2508/ML25083A142.pdf

[77] 91 Fed. Reg. at 23,632.

[78] 90 Fed. Reg. 22,587, 22,589 (May 29, 2025).

Energy and Environment Protection's (DEEP) comment that any such extension should be avoided[79]:

> DEEP does not recommend expanding the use of general licensing authority to additional important component parts of utilization facilities beyond the narrowly tailored approach proposed by the NRC. . . .
>
> While standardized and repeat deployments of advanced reactor technologies may justify limited streamlining for certain low-risk and reversible construction activities, broader use of general licensing authorities would reduce transparency and compress opportunities for meaningful review of site-specific safety, environmental, cultural, and community considerations.
>
> DEEP believes that retaining site-specific review and approval processes remains particularly important given the wide variation in proposed microreactor technologies, deployment models, operational characteristics, and host site conditions contemplated under 10 CFR Part 57. Even for standardized designs, site-specific considerations—including geology, hydrology, flooding, coastal hazards, transportation infrastructure, emergency planning assumptions, spent fuel management, and proximity to surrounding populations or sensitive resources—can materially affect the overall safety and environmental profile of a proposed deployment.
>
> DEEP also emphasizes that accelerated licensing pathways should not diminish or bypass important coordination with state, local, and Tribal governments.[80]

C. The NRC is Entitled to No Deference in Interpreting the AEA under *Loper Bright*.

Under *Loper Bright Enterprises v. Raimondo*, the Supreme Court rejected *Chevron* deference to an agency's interpretation of its own statutes, when those statutes did "not directly address[] the precise question at issue."[81] According to *Loper Bright*, agencies have "no special competence in resolving statutory ambiguities," and "even when an ambiguity happens to implicate a technical matter, it does not follow that Congress has taken the power to authoritatively interpret the statute from the courts and given it to the agency."[82] Nevertheless, "an agency's interpretation of a statute . . . may be especially informative to the extent it rests on factual premises within [the agency's] expertise."[83]

The AEA is not ambiguous about what constitutes a utilization facility. The statutory definition in AEA Section 11(cc), 42 U.S.C. § 2014(cc), has remained unchanged since 1954 and covers any equipment or device capable of making use of special nuclear material "in such quantity as to be of significance to the common defense and security, or in such manner as to affect the

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[79] Comment by the Connecticut Department of Energy and Environment Protection at ii, NRC-2025-0379-0063 ("DEEP Comment").

[80] DEEP Comment at ii–iii.

[81] 603 U.S. 369, 397 (2024) (quotation omitted).

[82] *Id.* at 400–01, 402.

[83] *Id.* at 402 (internal quotations and citations omitted).

health and safety of the public." A microreactor capable of sustaining a chain reaction with up to 10 metric tons of heavy metal unambiguously satisfies that definition.[84] Because the statute speaks directly to the question, no deference to the NRC's interpretation is available or appropriate.[85]

Nor have Congress' subsequent actions created any ambiguity about whether microreactors are utilization facilities. When Congress legislated comprehensively on advanced reactor licensing in NEIMA and the ADVANCE Act, it did not amend AEA Section 11(cc), did not define "microreactor" in a manner that would distinguish it from the utilization facility definition, and did not create any exception to the prohibition on general licenses for utilization facilities.[86] The ADVANCE Act expressly directed the NRC to license and regulate microreactors "pursuant to section 103 of the [AEA]"—the commercial licensing provision conditioned on the AEA Section 182(a) adequate-protection standard—without creating any new authority or exemption.[87]

A separate statutory definition of "micro-reactor" in the Energy Act of 2020[88] is a DOE program-specific term that operates in DOE's energy research framework and does not amend AEA Section 11(cc) or any NRC licensing provision. The AEA's prohibition on general licenses for utilization facilities is equally unchanged: 42 U.S.C. § 2139(a) authorizes general licenses only for "important component part[s] especially designed for" utilization facilities under AEA Section 11(cc)(2), 42 U.S.C. § 2014(cc)(2)—not for utilization facilities themselves—and neither NEIMA nor the ADVANCE Act expanded that authority.[89]

Even under the alternative assumption that some ambiguity exists in applying AEA Section 11(cc) to microreactors (which the States do not concede), the NRC is not entitled to deference because the NRC is *not* exercising its expert technical judgment, but rather abdicating that judgment to industry. Under *Loper Bright*, courts will not defer to an agency's judgment if it is not the product of its expertise.[90] Three concrete examples establish that abdication here.

First, the NRC has neither justified the 1 rem TEDE entry criterion against its own standing public dose limit of 0.1 rem under 10 C.F.R. § 20.1301 (*see* Section II(A), *infra*), nor supported the 10 MTHM fuel mass limit with the reactor-specific burnup, enrichment, neutron-spectrum, and fuel-form parameters necessary to establish that the limit bounds radiological consequences across the full range of technologies Part 57 is intended to govern.[91] The proposed rule provides no methodology for verifying that the 10 MTHM limit is conservative for designs operating at burnup

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[84] *See* 10 C.F.R. § 70.4 (defining formula quantity of strategic special nuclear material in kilograms, not tons); *see also* Section II(A)(ii), *infra*.

[85] *See Loper Bright*, 603 U.S. at 396 ("[I]f the intent of Congress is clear, that is the end of the matter." (quoting *Chevron U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 842 (1984))).

[86] *See* Nuclear Energy Innovation and Modernization Act, Pub. L. No. 115-439, §§ 3, 103(a)(4), 132 Stat. 5565, 5566, 5571 (2019); Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024, Pub. L. No. 118-67, div. B, §§ 2, 208, 138 Stat. 1448, 1449, 1511 (2024).

[87] *Id.* § 208, 138 Stat. at 1511; *see also* 170 Cong. Rec. S4130 (June 18, 2024) (Sen. Carper) ("The ADVANCE Act does not in any way alter the NRC's longstanding statutory responsibility to protect public health, safety, and the environment.").

[88] 42 U.S.C. § 18751(a)(3).

[89] *Cf.* Schofer Comment § 1, NRC-2025-0379-0021 ("The Commission should not rely on aggregation of exemptions to reach an outcome the statute prohibits outright.").

[90] *See* 603 U.S. at 400–02.

[91] *See* Table 1, 91 Fed. Reg. 23,628, 23,641 (May 1, 2026); Schofer Comment § 4, NRC-2025-0379-0021 ("[T]he proposed rule does not . . . disclose the burnup, enrichment, neutron-spectrum, or fuel-form assumptions that underlie Table 1, and . . . a single legacy table cannot conservatively bound all of them.").

levels of 90 to 180 GWd/MTU—three to four times the 45 GWd/MTU threshold at which NRC's own guidance identifies "high burnup" conditions.[92]

Second, the only source-term guidance the proposed rule offers for demonstrating compliance with the 1 rem TEDE entry criterion—Appendix C to NRC's draft *Guidance and Information for Developing Advanced Reactor Source Terms*, NUREG-2271—contains no acceptance criteria, no required calculational methods, no fuel-form-specific release fractions, no burnup or enrichment documentation requirements, no uncertainty analysis methodology, no FSAR format requirements, and no staff review criteria.[93] An agency that cannot specify the minimum analytical requirements necessary to verify compliance with its own entry criteria has not exercised the technical expertise that entitles it to deference under *Loper Bright*.[94]

Third, the proposed rule leaves to each applicant the unreviewable choice of which accident analysis methodology governs its site boundary and Systems, Structures, and Components (SSC) classification. An applicant may choose either the maximum hypothetical accident (MHA) approach—a conservative, deterministic bounding analysis that postulates worst-case system failures and maximum radionuclide release regardless of probability—or the maximum credible accident (MCA) approach—a risk-informed analysis that excludes physically unrealistic scenarios and quantifies only events credible given the technology and operating conditions.[95] The MHA produces a larger source term requiring a greater site boundary and broader SSC safety classification, while the MCA, by excluding certain conservative assumptions, provides the basis for a smaller site boundary and narrower SSC safety classification.[96] The NRC acknowledges that "[t]wo identical reactor designs could, in principle, yield different site boundary distances and safety classifications depending on whether their analyses employ the MHA or MCA methodology,"[97] yet prescribes no minimum conservative floor, stating only that "the preferred approach would likely depend on the scope and depth of analysis the applicant wishes to undertake."[98] Applicant-driven methodology selection is inconsistent with the NRC's non-delegable obligation under AEA Section 182(a), 42 U.S.C. § 2232(a), to independently determine that the use of special nuclear material will "provide adequate protection to the health and safety of the public."[99] When two identical reactor designs can produce materially different site boundaries solely because the applicant chose different analytical methodologies, the Commission has substituted applicant preference for independent regulatory judgment, in

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[92] *See* NRC, SFST-ISG-11, Rev. 3, *Cladding Considerations for the Transportation and Storage of Spent Fuel* at 2 (Nov. 17, 2003) (ML033230335) (establishing the 45 GWd/MTU threshold above which additional cladding integrity demonstrations are required).

[93] *See* Schofer Comment § 26(a), NRC-2025-0379-0021 (characterizing Appendix C as "an annotated bibliography" from which industry is invited to select whichever standards and analyses best support its licensing objectives); *see also* proposed 10 C.F.R. § 57.25(a), 91 Fed. Reg. at 23,719 (requiring only that applicants demonstrate radiological consequences are "below the accident dose acceptance criterion" without prescribing acceptable calculational methods).

[94] *See* 603 U.S. at 402.

[95] *See* 91 Fed. Reg. at 23,628, 23,639.

[96] *Id.* at 23,639.

[97] *Id.*

[98] *See* 91 Fed. Reg. 23,628, 23,639 (May 1, 2026).

[99] *See Union of Concerned Scientists v. NRC*, 824 F.2d 108, 109 (D.C. Cir. 1987) ("Section 182(a) provides the primary statutory standard relating to the Commission's mandate to ensure the safe operation of nuclear power plants").

violation of both AEA Section 182(a) and the APA's requirement that the agency itself resolve the major safety questions its rulemaking presents.[100]

Taken together, these three examples demonstrate that the NRC's position in the proposed rule rests not on agency expertise but on deference to industry—the precise inversion of the relationship *Loper Bright* requires.[101] The proposed rule should be withdrawn or substantially revised to require the NRC to prescribe minimum analytical rigor requirements—including technology-specific entry criterion parameters, mandatory source-term calculational methods, and a required minimum accident analysis methodology—before any Part 57 license application may be submitted or accepted.

D. The Proposed Rule Will Exacerbate the Difficulty that States and Other Interested Parties Face in Obtaining Judicial Review under the AEA.

The United States Supreme Court recently decided that a party or State must *successfully intervene* in an NRC licensing proceeding to obtain judicial review of that proceeding. *NRC v. Texas*, 605 U.S. 665, 669 (2025) ("To qualify as a party to a licensing proceeding, the Atomic Energy Act requires that one either be a license applicant or have successfully intervened in the licensing proceeding."). By interpreting the "party aggrieved" language in the Hobbs Act to require that a petitioner has successfully intervened in the underlying licensing proceeding, this ruling established a regulatory precondition—an admissible contention pursuant to 10 C.F.R. § 2.309—to the AEA's hearing mandate: "Any final order entered in any proceeding" "shall be subject to judicial review,"[102] and the NRC "*shall* grant a hearing upon the request of any person whose interest may be affected" by "any proceeding" under the AEA, and admit that person to the hearing.[103]

By expanding the use of generic finality for microreactor designs in proposed § 57.142(e), the Proposed Rule compounds the difficulty that States and other affected parties face in successfully intervening in a licensing proceeding, and thus obtaining judicial review. Under proposed § 57.142(e), matters resolved in a construction permit proceeding—including the threshold determination that a reactor qualifies for Part 57 licensing based on a "comparable risk profile"—are treated as finally resolved and unavailable for challenge in subsequent operating license proceedings.[104] The only way to challenge a generic rulemaking in an adjudicatory proceeding, whether on safety or design issues, is by obtaining a waiver under 10 C.F.R. § 2.335. To obtain a waiver, a petitioner must demonstrate that "special circumstances with respect to the subject matter of the particular proceeding are such that the application of the rule or regulation (or a provision of it) would not serve the purposes for which the rule or regulation was adopted."[105]

The NRC has acknowledged that this standard is "stringent by design," because "[w]hen [the NRC] engage[s] in rulemaking, [it is] 'carving out' issues from adjudication for generic resolution."[106] Indeed, "to challenge the generic application of a rule, a petitioner seeking waiver

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[100] *See Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (explaining that an agency acts arbitrarily when it "entirely fail[s] to consider an important aspect of the problem").

[101] *See Loper Bright Enters. v. Raimondo*, 603 U.S. 369, 400–02 (2024).

[102] 42 U.S.C. § 2239(b)(1).

[103] 42 U.S.C. § 2239(a)(1)(A) (emphasis added).

[104] *See* proposed § 57.142(e), 91 Fed. Reg. at 23,628, 23,737–38.

[105] 10 C.F.R. § 2.335(b).

[106] *In re Exelon Generation Co., LLC*, 78 N.R.C. 199, 207 (Oct. 31, 2013).

must show that there is something *extraordinary* about the subject matter of the proceeding such that the rule should not apply."[107] The NRC has "rarely, if ever, granted a petition for waiver." [108]

By including generic finality provisions in the Proposed Rule, the NRC makes it extremely difficult to challenge such designs in the future, even if the licensee has changed those design features, *see* Section II(C), *infra*, and even if design defects have emerged since the original generic finality determination.

The Proposed Rule states that the public would have "been afforded an opportunity for hearing on the design, including the postulated site parameters for the design, in accordance with §§ 57.142(e) and 57.60(c)" prior to approval of a generic design. However, notice of a licensing proceeding that may be given generic finality will not be sufficient notice to all States or all potentially affected parties where these designs may be deployed—that is, anywhere where the design meets the "postulated site parameters."[109]

Further, under proposed § 57.130, the NRC constricts the period for intervention to 30 days for operating license renewals and license amendments (which could include changing the site of a particular operating license), which would deprive States and other interested parties of sufficient notice and opportunity to comment or petition to intervene and request a hearing.

Though the Proposed Rule provides that States need not demonstrate *standing* if a facility will be located within its borders,[110] there is no indication that the NRC is willing to relax the admissible contention standards set out in 10 C.F.R. § 2.309. Because proposed Part 57 includes generic finality determinations and expedited reviews, the States are concerned that it will make judicial review of any one siting decision all-but-impossible, and effectively abrogate the AEA's judicial review provisions, although the States do not concede that it does.

The Proposed Rule's violations of key provisions of the AEA would also create a claim under the Administrative Procedure Act for agency action that is "not in accordance with law."[111]

II. The Proposed Rule Violates the Administrative Procedure Act.

The Proposed Rule violates the Administrative Procedure Act (APA) because the following provisions are arbitrary and capricious, and/or lack sufficient justification in the record: (i) the Proposed Rule's design and entry criteria; (ii) the Proposed Rule's elimination of emergency planning zones; (iii) the Rule's amended backfit provisions; (iv) the Proposed Rule's reduction in defense-in-depth layers; and (v) the Rule's expedited timeframes.

A. The Proposed Entry Criteria

The proposed Part 57 licensing pathway requires an applicant meet just two entry criteria: First, an applicant must demonstrate that its reactor design meets a dose-based entry criterion of 1 rem TEDE under accident conditions, as established in proposed § 57.25(a). *See* 91 Fed. Reg. at 23,628. Second, an applicant under proposed Part 57 must limit eligible designs to those with a

[107] *Id.* (emphasis added).
[108] *Nat. Res. Def. Council v. U.S. Nuclear Regul. Comm'n*, 823 F.3d 641, 649 (D.C. Cir. 2016).
[109] 91 Fed. Reg. at 23,643.
[110] *See* 91 Fed. Reg. 23,703 (describing conforming edits to 10 C.F.R. § 2.309(h)(2)).
[111] 5 U.S.C. § 706(2)(A).

total inventory of special nuclear material (SNM)—comprising thorium, uranium, and plutonium combined—not exceeding 10 metric tons heavy metal (MTHM). *Id.*

As detailed below, both these criteria are arbitrary and capricious, and lack sufficient justification in the record to survive APA review:

i. The 1 Rem Radiation Threshold

Proposed Part 57's first entry criterion allows for accelerated licensing of microreactors if the applicant can guarantee that, in the event of an accidental release of radioactive material, the facility would not expose the public to more than 1 rem of total effective dose equivalent (TEDE). The 1 rem ceiling is arbitrary and capricious and insufficiently justified on the record because: (a) it is significantly higher than NRC's TEDE for individual members of the public; (b) it is borrowed from the NPUF rulemaking, which licenses different categories of reactors; and (c) it relies on EPA Guidance that governs when evacuations should begin.

It is therefore non-conservative and does not sufficiently protect public health and the environment.

a. The NRC Has Not Adequately Justified the Use of a 1 Rem Design Criterion in light of 10 C.F.R. § 20.1301's dose limit.

The NRC's selection of a 1 rem TEDE entry criterion is arbitrary and capricious because the agency has failed to provide a reasoned explanation connecting that value to the purpose for which it is being used in proposed Part 57.

In the Statement of Considerations, the NRC explains that the 1 rem criterion is not intended to represent an acceptable public dose limit. Rather, the agency characterizes it as a "figure of merit" used to inform accident analyses and establish minimum design and performance requirements for safety-related structures, systems, and components. The NRC further states that the criterion "does not represent acceptable or actual public exposures received during normal and emergency conditions," which remain governed by 10 CFR Part 20 and emergency planning requirements.

This explanation raises a fundamental question that the Proposed Rule never answers: why is 1 rem the appropriate threshold for determining eligibility for Part 57 licensing?

The NRC's existing radiation protection regulations limit dose to individual members of the public from licensed operations to 0.1 rem (1 mSv) annually.[112] Although the Commission need not adopt the Part 20 public dose limit as the Part 57 entry criterion, it must provide a rational explanation for selecting a value ten times higher than its longstanding public dose standard. The Proposed Rule contains no such analysis.

Instead, the record indicates that the 1 rem value originates from EPA Protective Action Guides ("PAGs"), which are emergency-response planning benchmarks used to determine when protective actions such as evacuation or sheltering should begin. The technical literature cited by the NRC repeatedly describes the 1 rem value as the lower bound of the EPA PAG range and explains that it is used to determine Emergency Planning Zone (EPZ) size and emergency response actions. The EPA PAG framework was developed to guide emergency managers responding to

[112] 10 C.F.R. § 20.1301.

accidents; it was not developed to establish reactor design acceptance criteria or determine whether a reactor should qualify for a streamlined licensing framework.

Indeed, the NRC's own supporting analyses emphasize that PAGs "should not be regarded as dose limits" and instead function as planning tools used to determine when protective actions become appropriate. By relying on a planning threshold as a licensing entry criterion, the Commission conflates two distinct regulatory concepts without adequately explaining why the resulting approach is protective of public health and safety.

The lack of explanation is particularly significant because proposed Part 57 simultaneously reduces or eliminates several traditional layers of defense, including reliance on predefined emergency planning zones. Under the proposed framework, the 1 rem criterion effectively becomes one of the principal regulatory screens for determining whether a reactor qualifies for the new licensing pathway. The Commission therefore must do more than state that 1 rem has been used elsewhere in emergency planning analyses; it must explain why that value is appropriate for this fundamentally different regulatory purpose.

The lack of justification is also particularly concerning because the NRC is simultaneously conducting a separate rulemaking entitled, *Reforming and Modernizing the NRC's Radiation Protection Framework*,[113] which is expected to evaluate foundational aspects of the Commission's radiation protection regulations contained in 10 C.F.R. Part 20. At the time of these comments, the proposed rule for NRC-2025-1140 has not yet been released for public review.

The proposed Part 57 framework therefore relies upon a dose-based entry criterion while the Commission is concurrently considering potential revisions to the broader radiation protection framework that underpins the NRC's dose standards and radiological protection philosophy. The NRC has not explained whether the proposed 1 rem criterion would remain appropriate under any future revisions to Part 20, nor has it evaluated whether completion of the radiation protection rulemaking could affect the technical basis for the proposed Part 57 threshold.

Proceeding with a reactor licensing framework that relies upon a specific dose-based criterion before the Commission has completed its broader review of radiation protection standards risks creating regulatory inconsistency and uncertainty for applicants, Agreement States, and members of the public. At a minimum, the NRC should explain how the proposed 1 rem criterion relates to the ongoing Part 20 modernization effort and whether the outcome of that rulemaking could affect the appropriateness of the proposed Part 57 entry criterion.

The NRC's failure to disclose this relationship or dependency is an independent APA notice defect. An agency's notice of proposed rulemaking "may rely on data in its files, or on public information, in reaching its decision so long as it specifies what is involved in sufficient detail to allow for meaningful adversarial comment and judicial review," and reference the information on the record.[114] When the technical predicate for a proposed rule is concurrently under revision in a parallel proceeding, the agency must disclose that relationship or dependency

[113] Docket ID NRC-2025-1140; *see* NRC, *Planned Rulemaking Activities*, https://www.nrc.gov/reading-rm/doc-collections/rulemaking-ruleforum/active/ruledetails?id=2239

[114] *Pharm. Rsch. & Mfrs. of Am. v. Fed. Trade Comm'n*, 44 F. Supp. 3d 95, 133 (D.D.C. 2014) (quotation omitted and cleaned up); *cf. Am. Iron & Steel Inst. v. EPA*, 886 F.2d 390, 400 (D.C. Cir. 1989) ("A single footnote tucked away in the Federal Register in minuscule type is far from the best means of giving notice of an important change in policy.").

so commenters can evaluate the proposal against the range of possible outcomes. The States object on the record now, that this non-disclosure creates a prospective logical outgrowth problem.[115] If the NRC finalizes Part 57 with the 1 rem criterion calibrated against current Part 20 standards and *Reforming and Modernizing the NRC's Radiation Protection Framework* (NRC-2025-1140) subsequently revises those standards, the final rule's technical basis will differ materially from what was proposed and what commenters addressed. Conversely, if the NRC adjusts the 1 rem criterion in response to a revised Part 20 framework without additional notice and comment, the revised criterion will not be a logical outgrowth of this proposal. Either path produces a final rule vulnerable to challenge because no commenter will have had the opportunity to address the criterion as it will actually operate.[116]

The Commission's failure to explain the relationship between the proposed 1 rem criterion, the existing public dose limits in Part 20, and the ongoing NRC-2025-1140 rulemaking further demonstrates that the agency has not provided the reasoned decision-making required under the Administrative Procedure Act.

Absent such an explanation, the NRC has failed to articulate a rational connection between the facts found and the choice made, rendering the proposed 1 rem criterion arbitrary and capricious. The NRC has also potentially denied commenters the meaningful opportunity to address the proposed criterion against the regulatory framework that will govern it when the final rule takes effect, in violation of APA Section 553(b). The NRC must either suspend this rulemaking until NRC-2025-1140 is complete and re-propose the 1 rem criterion calibrated against the revised Part 20 framework with a new comment period, or publish a supplemental notice disclosing the range of Part 20 outcomes under consideration and explain how each would affect the proposed threshold.

b. The 1 rem ceiling is borrowed from NPUF licensing

The 1 rem ceiling was established for non-power production or utilization facilities (NPUFs).[117] NPUFs are reactors designed and used for research, testing, and training rather than for electricity generation,[118] and most are found at universities and national laboratories.[119] The NRC currently regulates 31 NPUFs, "of which 29 are research reactors or testing facilities currently licensed to operate and two are in the construction process."[120] NPUFs are generally slow, low-power machines with small fuel loads, and their cores are submerged in pools of water that passively absorb heat without mechanical systems.[121] NPUFs generally "operate at low power

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[115] *Shell Oil Co. v. EPA*, 950 F.2d 741, 750–51 (D.C. Cir. 1991) ("[A]n unexpressed intention cannot convert a final rule into a "logical outgrowth" that the public should have anticipated.").

[116] *See id.*; *Long Island Care at Home, Ltd. v. Coke*, 551 U.S. 158, 174 (2007).

[117] NRC, *Non-Power Production or Utilization Facility License Renewal*, 89 Fed. Reg. 106,234 (Dec. 30, 2024) ("NPUF Final Rule").

[118] *See generally id.* at 106,235.

[119] *Id.* at 106,236.

[120] NRC, *Locations of Nonpower Production and Utilization Facilities*, https://www.nrc.gov/info-finder/nonpower/index (last visited June 10, 2026).

[121] 89 Fed. Reg. at 106,240 (explaining that NPUFs, in contrast to power reactors other than testing facilities, "operate at low power levels, temperatures, and pressures, and have a small inventory of fission products in the fuel," and therefore have "a lower potential radiological risk to the environment and the public" and that 26 of the 30 NPUFs currently licensed to operate "have cores that are submerged in tanks or pools of water that provide sufficient passive decay heat removal to prevent overheating of the fuel").

levels, temperatures, and pressures, and have a small inventory of fission products in the fuel, as compared to power reactors, therefore presenting a lower potential radiological risk to the environment and the public."[122] Because of these characteristics, they carry lower radiological risk to the public. NPUFs have also been subject to NRC inspection for over 60 years without significant fuel or equipment failures, and their designs change so rarely that few new licenses or amendments are needed annually.[123]

The NRC does not explain or justify on the record why adopting the 1 rem threshold for NPUFs is appropriate for microreactors or reactors with similar risk profiles. In contrast to NPUFs, commercial microreactors do not have a decades-long history of regulation by the NRC: indeed, the States could not identify a single commercial microreactor that is currently operational in the United States. Nor do microreactors have the same uniformity of fuel types, cooling mechanisms, accident procedures, range of power output, or fuel speeds as most NPUFs.[124] Most significantly, commercial microreactors are permitted under the proposed rule to hold up to ten metric tons of fuel[125]—roughly 800 to 1,000 times the uranium inventory of a typical university research reactor licensed by the NRC—a difference that spans three orders of magnitude and fundamentally undermines the regulatory equivalence the NRC draws between microreactors and the NPUF framework from which the 1 rem criterion was borrowed, and which substantially increases the potential consequences of an accident.[126]

The NRC's reliance on NPUF precedent is further undermined by the fact that the historical use of a 1 rem criterion for research reactors was tied to emergency planning determinations and EPZ sizing, not to the creation of a new risk-informed licensing framework for commercial power reactors. The agency has not explained why a criterion developed for small research and test reactors should govern eligibility for commercial reactors that may possess orders of magnitude greater radioactive inventories and operate under substantially different mission profiles.

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[122] NRC, *Non-Power Production or Utilization Facility License Renewal*, 82 Fed. Reg. 15,643, 15,647-48 (Mar. 30, 2017); *see* NPUF Final Rule at 106,239 (explaining that, before the 2024 NPUF rulemaking, testing facilities were defined as NPUFs producing more than 10 MW of energy).

[123] NPUF Final Rule, 89 Fed. Reg. at 106,240.

[124] 91 Fed. Reg. at 23,631 ("Power outputs range from only a few kilowatts to several tens of megawatts, and designs may operate in either a fast or thermal neutron spectrum.").

[125] Proposed Rule § 57.25(b)(2), 91 Fed. Reg. 23,730.

[126] The 10 MTHM fuel mass ceiling proposed in 10 C.F.R. § 57.25(b) exceeds by several orders of magnitude the fuel inventories of existing NRC-licensed NPUF research and test reactors. *See* 91 Fed. Reg. at 23,628, 23,641. University TRIGA research reactors, the most widely U.S.-licensed NPUF reactor type, typically have SNM possession limits between 12 to 25 *kilograms* of uranium under their NRC licenses. *See, e.g.*, *In the Matter of Texas A&M University (Nuclear Science Center TRIGA Research Reactor); Order Modifying Amended Facility Operating License No. R-83*, 71 Fed. Reg. 42,882, 42,882 (July 28, 2006) (amending license to allow up to 15 kg of Uranium enriched up to 20%); *In the Matter of Washington State University (TRIGA Reactor), Order Modifying Amended Facility Operating License No. R-76*, 73 Fed. Reg. 52,429, 52,431 (Sep. 9, 2008) (amending license to use up to 25 kg of Uranium enriched up to 20%). Even the six U.S. High Performance Research Reactors (USHPRRs), which includes the 85 MWt High Flux Isotope Reactor at Oak Ridge National Laboratory and the 6 MWt MIT Research Reactor, operate with core fuel loadings measured in the hundreds of kilograms. *See* Idaho National Laboratory, *Advanced Test Reactor (ATR) Conversion to Low Enriched Uranium*, INL Digital Library, https://inldigitallibrary.inl.gov/content/uploads/50/2026/04/Sort_2044.pdf (noting the six USHPRRs collectively consume approximately 250 kg of enriched uranium annually). As the World Nuclear Association confirms, "[o]nly a few kilograms of uranium is needed to fuel a research reactor," compared to "perhaps a hundred tonnes in a power reactor." World Nuclear Ass'n, *Research Reactors* (updated Apr. 20, 2026), https://world-nuclear.org/information-library/non-power-nuclear-applications/radioisotopes-research/research-reactors.

c. The 1 rem dose is the level at which the EPA recommends evacuations or other public health responses begin

The NRC also relies on the Environmental Protection Agency's (EPA) Protective Action Guides (PAGs) to arrive at a 1 rem threshold. Yet the EPA recommends that evacuation or sheltering-in-place should *begin* once the projected dose to the public is 1 rem.[127] The 1 rem threshold should not be treated by the NRC as a ceiling defining what is safe. The EPA even warns that the PAGs do not indicate a boundary between what is safe or unsafe, and should not be used as a licensing standard.[128] The NRC admits that the 1 rem criterion is "a figure of merit used to characterize the minimum requirements for design, fabrication, construction, testing, operational limits, and performance for safety-related SSCs," and "does not represent acceptable or actual public exposures received during normal and emergency conditions."[129] But the NRC proposes to use the 1 rem limit as an entry criterion for the expedited licensing track anyway, along with more relaxed safety standards in proposed Part 57.

Given that this metric was taken from a rulemaking on different types of reactor facilities, ignores the NRC's own public dose limit, and is drawn from public health response guidance not intended to be an indicator of what is safe, the NRC's use of a 1 rem threshold as an entry criterion for expedited licensing is arbitrary and capricious, and lacks sufficient basis or justification in the record.

ii. The 10 MTHM Entry Criterion and Table 1 are Non-Conservative for Non-Light Water Reactor Designs.

The second entry criterion for Part 57 relates to the amount of fuel that a microreactor can contain. The NRC proposes that a microreactor contain only 10 metric tons of heavy metal (MTHM).

The NRC specifically requests comment on whether the 10 MTHM limit should be retained as a separate eligibility criterion or whether qualification for Part 57 should be based solely upon the proposed 1 rem TEDE criterion. The States urge the NRC to retain a deterministic material threshold in addition to the proposed dose-based entry criterion. The States strongly disagree with eliminating the deterministic material threshold. The States incorporate DEEP's response to NRC's Question 1-1, asking whether a deterministic material limit of 10 metric tons should be removed.[130] As DEEP notes, "a deterministic material limit provides an important regulatory backstop that reduces overreliance on uncertain analytic predictions and helps ensure a stable and transparent licensing framework."[131] Unlike a deterministic material limit, compliance with a dose-based criterion depends upon numerous assumptions regarding source terms, accident progression, radionuclide inventories, atmospheric dispersion modeling, meteorological conditions, release fractions, fuel performance, fission-product transport, and dose conversion

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[127] Environmental Protection Agency (EPA), *Protective Action Guides and Planning Guidance for Radiological Incidents* at 6 & n.b (Jan. 2017) ("PAG Manual"), https://www.epa.gov/system/files/documents/2025-04/epa_pag_manual_final_revisions_01-11-2017_cover_508-d.pdf.

[128] PAG Manual at 1 ("PAGs do not establish an acceptable level of risk for normal, non-emergency conditions, nor do they represent the boundary between safe and unsafe conditions. The PAGs are not legally binding regulations or standards and do not supersede any environmental laws.").

[129] 91 Fed. Reg. at 23,638.

[130] DEEP Comment at i–ii.

[131] *Id.* at i.

methodologies. Small changes in those assumptions can significantly affect calculated offsite doses. A deterministic material threshold therefore serves as an important regulatory backstop that reduces reliance on uncertain analytical predictions and provides a clear, objective, and transparent limit on the quantity of radioactive material eligible for the Part 57 licensing pathway. Accordingly, the States support maintaining a deterministic material limit in addition to a performance-based dose criterion.

The States are concerned, however, that the NRC has not demonstrated that the proposed limit of 10 MTHM is sufficiently conservative for the full range of advanced reactor technologies that would qualify under Part 57. The issue is not that a deterministic threshold exists; rather, it is whether the selected threshold adequately protects public health and safety and the common defense and security across reactor designs that differ substantially in burnup, neutron spectrum, fuel form, enrichment, radionuclide inventories, and accident progression characteristics.

The record does not adequately demonstrate that the proposed value of 10 MTHM appropriately bounds the full range of advanced reactor technologies eligible for Part 57. The Commission has not sufficiently explained how differences in burnup, neutron spectrum, fuel form, enrichment level, radionuclide inventory, and accident progression were considered in establishing the proposed threshold. The States note that this 10 MTHM limit does not account for the different radiological risk of the different fuel types and reactor designs that would be licensed under Part 57. If the Commission cannot make that demonstration, it should adopt technology-specific limits or alternative criteria that more accurately reflect the radiological hazards presented by different reactor concepts.

The Proposed Rule appears to assume that a common fuel-mass threshold can be applied across fundamentally different reactor technologies while still producing comparable radiological consequences. The record does not adequately support that assumption. A metric ton of fuel is not a metric ton of risk. The radiological inventory associated with a given quantity of fuel depends on numerous reactor-specific parameters that are not captured by fuel mass alone. Consequently, two reactors possessing the same quantity of heavy metal may present substantially different accident consequences.

The States therefore support retention of a deterministic material threshold but recommend that the NRC provide additional technical justification demonstrating that the proposed 10 MTHM limit appropriately bounds the full range of reactor designs eligible for Part 57. If the NRC cannot demonstrate that the threshold is adequately conservative and protective across those designs, the Commission should revise the criterion or establish technology-specific limits that more accurately reflect the radiological hazards associated with different reactor concepts.

Table 1 in the Proposed Rule sets out threshold values that a reactor must meet to qualify for accelerated licensing under Part 57.[132] It lists the fuel form, reactor power (in thermal Megawatts—MWth), uranium enrichment levels, and MTHM for a variety of reactor types. These thresholds are based primarily on the amount and type of fuel a reactor uses. However, the fuel types and quantities set out in Table 1 insufficiently demonstrate conservative parameters because the rate at which a reactor generates radiation depends on several additional variables that Table 1 does not account for. In other words, the amount of nuclear fuel does not tell you how much dangerous radioactive material is present in each MTHM, and the NRC leaves it to industry to

[132] 91 Fed. Reg. at 23,641.

demonstrate how it gets from 10 MTHM of fuel to a 1 rem TEDE at the site boundary under accident conditions, even assuming that a 1 rem TEDE during an accident of unspecified duration was safe (which the States do not concede). The NRC does not provide the reactor-specific parameters necessary to do so.

The States are particularly concerned that the Proposed Rule does not sufficiently account for four variables that significantly affect radionuclide inventories and accident consequences: burnup, neutron spectrum, fuel form, and enrichment level.[133] This insufficiency renders the second entry criterion, requiring a fuel load of 10 MTHM against Table 1, arbitrary and capricious or inadequately supported in the record.

a. Burnup

The NRC describes burnup as "a way to measure how much uranium is burned in the reactor. It is the amount of energy produced by the uranium."[134] A reactor's "burnup level affects the fuel's temperature, radioactivity and physical makeup."[135] Burnup is measured in gigawatt-days per metric ton of uranium (GWd/MTU).[136] Burnup, measured in GWd/MTU, is a "measure of how long a fuel rod is in the core and the power level it reaches. 'High burnup fuel' is in the reactor core for longer than 'low burnup fuel.'"[137] Over time, the "maximum burnup" that the NRC has allowed "increased as technology advanced [the NRC's] ability to understand the changes the fuel undergoes in the reactor core." That understanding "is key to [the NRC's] ability to make safety decisions."[138]

A burnup rate of around 45 GWd/MTUs is associated with conventional large light water reactors (LWR).[139] The NRC has historically considered any burnup levels above 45 GWd/MTU as "high burnup."[140] Currently, the average burnup rate for conventional LWRs is around 50-60 GWd/MTU.[141] "Higher burnup fuel comes out of the reactor hotter and more radioactive than lower burnup fuel. . . . In general, compared to 35 GWd/MTU, 45 GWd/MTU fuel is 35% hotter

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[133] *See* Table 1, 91 Fed. Reg. at 23,641 (comparing various reactor types by the amount of SNM in terms of MTHM); Schofer Comment § 4 (observing that "[t]he proposed rule does not . . . disclose the burnup, enrichment, neutron-spectrum, or fuel-form assumptions that underlie Table 1, and it applies the table as a fixed gate across the full spectrum of technologies that the rule purports to cover" even though those variables "materially affect the radionuclide inventory per MTHM, and a single legacy table cannot conservatively bound all of them"); *id.* n.21 ("A single per-MTHM source-term table that does not identify its underlying burnup, enrichment, spectrum, and fuel-form assumptions cannot be applied as a generic licensing gate across reactor classes.").

[134] NRC, *Backgrounder on High Burnup Spent Nuclear Fuel*, https://www.nrc.gov/reading-rm/doc-collections/fact-sheets/bg-high-burnup-spent-fuel, Adams Accession No. ML18270A110.

[135] *Id.*

[136] *Id.* It can also be measured in Megawatt Days (MWd/t). 1000 MWd/t is equivalent to 1 GWd/t.

[137] NRC, *High Burnup Spent Fuel* (Dec. 2013), Adams Accession No. ML13357A248.

[138] *Id.*

[139] NRC, *Cladding Considerations for the Transportation and Storage of Spent Fuel* at 2, ISG-11, Rev. 3 (Nov. 17, 2003), Adams Accession No. ML033230335 (establishing cladding integrity criteria for spent fuel storage and transportation, including the 45 GWd/MTU average assembly burnup threshold above which additional cladding integrity demonstrations are required).

[140] *Id.*

[141] Nuclear Energy Agency, *High Burn-up Fuel in Light Water Reactors (LWRs)*, https://www.oecd-nea.org/jcms/pl_21509/high-burn-up-fuel-in-light-water-reactors-lwrs

and 33% more radioactive. Fuel burned to 55 GWd/MTU is 78% hotter and 72% more radioactive."[142]

Several designs in Table 1, especially the gas-cooled TRISO reactors, are designed to run to 100-300 GWd/MTU.[143] For example, the pebble bed gas-cooled TRISO design listed in Table 1 of the Proposed Rule is designed to operate at burnup levels of approximately 90–180 GWd/MTU, compared to the 45 GWd/MTU threshold used to define "high burnup" in NRC's guidance.[144] One ton of high-burnup fuel releases far more dangerous isotopes like Cesium-137 and Iodine-131 than a ton of conventional LWR fuel at moderate burnup.[145] The NRC does not disclose in Table 1 or the Proposed Rule what burnup values it assumed establishing the 10 MTHM limit for pebble bed TRISO designs, creating an unanalyzed gap between the Table 1 eligibility criterion and the radiological consequences it is meant to bound.

Reactors that generate more heat or operate over longer periods produce higher burnup levels, which in turn raise internal temperatures and release gases that further insulate the core and amplify heat buildup. This compounding effect means that commercial microreactors operating at higher temperatures or over greater lengths of time will operate at higher risk than Table 1 assumes.[146] In other words, reactors with higher burnups will contain far more radioactive material and an accident would be more consequential than the Proposed Rule anticipates.

Burnup levels are vital to the NRC's review of reactor safety, and are also important for spent fuel storage:

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[142] NRC, *High Burnup Spent Fuel*, Adams Accession No. ML13357A248.

[143] *See, e.g.*, Nuclear Energy Agency, *PMBR Couple Neutronic/Thermal-Hydraulics Transient Benchmark: The PBMR-400 Core Design* at 13 (Jul. 13, 2013), https://one.oecd.org/document/NEA/NSC/DOC(2013)10/en/pdf ("On average, each fuel pebble makes six passes through the reactor before being finally discharged to the spent fuel storage tanks with a target burn-up of > 90 000 MWd/MTU," which is equivalent to 90 GWd/t); Andreades, C., et al., UNIVERSITY OF CALIFORNIA AT BERKELEY/U.S. DEPARTMENT OF ENERGY, *Technical Description of the "Mark 1" Pebble-Bed Fluoride-Salt-Cooled High-Temperature Reactor (PB-FHR) Power Plant* at 38, 116 (Sep. 30, 2014), https://fhr.nuc.berkeley.edu/wp-content/uploads/2014/10/14-002-PB-FHR_Design_Report_Final.pdf (average pebble discharge burnup is 180 MWd/kgHM, which is equivalent to 180 GWd/MTHM); Forsberg, C. & Kadak, A., 210 NUCLEAR TECHNOLOGY 1354-1365 (Aug. 2024), *Safeguards and Security for High-Burnup TRISO Pebble Bed Spent Fuel and Reactors* at 1356 https://www.tandfonline.com/doi/full/10.1080/00295450.2023.2298157#abstract (listing pebble burnup of high temperature gas-cooled reactor designs as 168,500 MWd/t (168.5 GWd/t) and fluoride salt-cooled high-temperature reactors as 193,600 MWd/t (193.6 GWd/t)); Idaho National Laboratory, *Initial Evaluation of Fuel-Reactor Concepts for Advanced LEU Fuel Development* (Feb. 2020), https://inldigitallibrary.inl.gov/content/uploads/50/2026/04/Sort_22041.pdf

[144] *See* NRC, SFST-ISG-11, Rev. 3, at 2 (ML033230335).

[145] U.S. Nuclear Waste Technical Review Borad, *Evaluation of the Department of Energy's Research Program to Examine the Performance of Commercial High Burnup Spent Nuclear Fuel During Extended Storage and Transportation* at A-9, A-11, and A-16 (Jul. 2021) https://www.nwtrb.gov/docs/default-source/reports/nwtrb_highburnupfuelreport_july2021_final.pdf?sfvrsn=c6f6f105_16

[146] World Nuclear Ass'n, *Fast Neutron Reactors* (updated Mar. 31, 2026), https://world-nuclear.org/information-library/current-and-future-generation/fast-neutron-reactors ("Fast neutron reactors give off more neutrons than they use and thus can be used to 'breed' fuel. They have much higher neutron flux than thermal reactors . . . and produce different spectra of fission products."); *see also* Table 1, 91 Fed. Reg. at 23,641 (listing the U-TRU-10Zr Metal fuel design, which operates in a fast neutron spectrum, alongside thermal-spectrum TRISO designs under the same 10 MTHM limit, without distinguishing the different radiological consequences of fast versus thermal neutron spectra at equivalent MTHM loadings); World Nuclear Association, *Nuclear Fuel Cycle Overview*, https://world-nuclear.org/information-library/nuclear-fuel-cycle/introduction/nuclear-fuel-cycle-overview.

> Each system has limits on temperature and radioactivity. How hot and how radioactive spent fuel is depends on burnup, as well as the fuel's initial makeup and conditions in the core. All these factors must be taken into account in designing and approving dry storage and transport systems for spent fuel.[147]

Transportation and storage for high burnup fuel must meet the safety requirements of 10 C.F.R. Part 71 (transportation) and 10 C.F.R. Part 72 (storage). Higher burnup fuels require updated transportation and dry cask storage designs, and the Proposed Rule does not sufficiently explain how high burnup materials will be transported or stored. Indeed, the NRC still publicly expresses reservations for licensing "higher burnup" reactors, which it describes as "75 or 80 gigawatt-days per metric ton of uranium (GWd/MTU)."[148] It states:

> In addition to license amendments, several of the other specific tasks necessary for higher burnup to be licensed may include . . . . Update of fuel analytical models which predict fuel behavior and performance to capture higher burnup effects; Update of design bases and safety analyses at higher burnup levels; Changes to source term calculations; Development of transportation and dry storage casks for higher burnup; Criticality safety analysis of spent fuel pools and modifications for higher heat loads; Address technical challenges (e.g., Fuel Fragmentation Relocation and Dispersal.[149]

Contrary to what the NRC has indicated about the steps it will need to take to license high burnup reactors, the Proposed Rule does not point us to updated fuel analytical models, updated design bases and safety analyses, changes to source term calculations, or development of dry storage cask and transport systems.

b. Neutron Spectrum

The second variable is the type of neutron activity inside the reactor. Common reactors, such as LWRs, use water to slow down neutrons and moderate the reaction.[150] Some commercial microreactor designs use what are called fast-spectrum reactors, which emit neutrons at much higher speeds (energy levels) and produce different types of radioactive byproducts.[151] Table 1's thresholds are derived from LWR assumptions and may therefore underestimate risk from fast spectrum designs.

c. Fuel Type

Microreactors intended for future commercial use may use a wider variety of fuel types than conventional reactors. Different fuels release radiation in different ways and at different rates, but Table 1 does not provide safety parameters to account for the differing potential for

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[147] NRC, *Backgrounder on High Burnup Spent Nuclear Fuel*

[148] NRC, *Higher Burnup: Higher Burnup Implementation*, https://www.nrc.gov/reactors/power/atf/technologies/burnup

[149] *Id.*

[150] International Atomic Energy Agency (IAEA), *Water Cooled Reactors*, https://www.iaea.org/topics/water-cooled-reactors (last visited June 10, 2026).

[151] World Nuclear Association, *Fast Neutron Reactors* (updated Mar. 31. 2026), https://world-nuclear.org/information-library/current-and-future-generation/fast-neutron-reactors

radiological release, treating each fuel type as though it behaves like the others under accident conditions.[152]

d. Enrichment Levels

Fuel can be enriched with a particular uranium isotope (Uranium-235) to enable a more energetic chain reaction, generating energy more efficiently.[153] However, more highly enriched fuel has greater radioactive output in an accident scenario and produces different radioactive byproducts than Table 1's safety assumptions reflect.[154]

Taken together, Table 1's qualifying thresholds rest on assumptions suited to conventional LWR technology and do not adequately capture the range of designs, fuel types, and operating conditions found in possible commercial microreactors. As a result, the table could grant expedited licensing to reactors that pose meaningfully greater accident risks than the rule acknowledges.

The NRC is clearly aware of the differences between LWRs and other microreactors, because in its preamble to the Proposed Rule, it explains that it did not pursue amending Part 52 to provide a licensing track for microreactors because "the requirements for inspections, tests, analyses, and acceptance criteria (ITAAC) were designed for light water reactors (LWRs)," and so could take longer than needed for the NRC's proposed microreactor pathway.[155] But the NRC does not account for this difference when it comes to Table 1's fuel parameters: which appear to be derived from LWR technology with a burnup rate around 45 GWd/MTHM.[156] However, as explained above, most microreactors have a significantly higher burnup rate.

As mentioned above in Section I, the appendix in the NRC's draft Guidelines for Applications allegedly provides guidance on advanced reactor source terms,[157] but fails to provide clear guidance on how those parameters should inform the entry criterion and source-term calculations, simply providing a list of resources and presentations instead.[158] The Proposed Rule

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[152] NRC, *Fuel Qualification for Advanced Reactors* (Mar. 2022) NUREG-2246, https://www.nrc.gov/docs/ML2206/ML22063A131.pdf; Table 1, 91 Fed. Reg. at 23,641 (listing four fuel forms, TRISO Pebble, U-TRU-10Zr Metal, UO2 Pellets, and Liquid Salt LiF-BeF2-UF4).

[153] NRC, *Uranium Enrichment*, https://www.nrc.gov/materials/fuel-cycle-fac/ur-enrichment (last visited June 10, 2026) (describing uranium enrichment process and noting that reactors typically use "low-enriched uranium [that] has been enriched to about 3–5 percent U-235," while HALEU-fueled reactors require enrichment to between 5% and 19.75%).

[154] World Nuclear Association, *Uranium Enrichment*, https://world-nuclear.org/information-library/nuclear-fuel-cycle/conversion-enrichment-and-fabrication/uranium-enrichment; World Nuclear Association, *High-Assay Low-Enriched Uranium (HALEU)*, https://world-nuclear.org/information-library/nuclear-fuel-cycle/conversion-enrichment-and-fabrication/high-assay-low-enriched-uranium-haleu

[155] 91 Fed. Reg. at 23628.

[156] *See* 91 Fed. Reg. at 23,640 (explaining that Table 1 based its calculations of SNM quantities based on the Oak Ridge National Laboratory SCALE code system, with calculations derived from various types of LWRs).

[157] "Source Term" means the "Types and amounts of radioactive or hazardous material released to the environment following an accident." NRC, *Glossary: Source Term*, https://www.nrc.gov/reading-rm/basic-ref/glossary/source-term.

[158] *See* Schofer Comment § 26(a) (explaining that compliance with the 1 rem TEDE entry criterion "must be demonstrated through an MHA or MCA source-term analysis," but that the Appendix C in the draft *Guidance and Information for Developing Advanced Reactor Source Terms*, NUREG-2271, is only "an annotated bibliography" with "no acceptance criteria, no required calculational methods, no fuel-form specific release fractions[,] . . . no burnup or enrichment documentation requirements, no uncertainty analysis methodology, no FSAR format requirements, and no staff review criteria.").

and draft Regulatory Analysis therefore lack sufficient basis in the record to justify these entry criteria, create vagueness problems, and give insufficient notice to the public of the standards industry must meet under Part 57.

B. Elimination of Emergency Planning Zones and Reliance on Undefined Emergency Planning Requirements.

The Proposed Rule eliminates a defined Emergency Planning Zone (EPZ) for Part 57 facilities, reasoning that the "characteristics of facilities" to be licensed under Part 57 "provide assurance that planning for such precautionary actions is unnecessary."[159] That rationale is arbitrary and capricious for three independent reasons:

First, the NRC's rationale is circular. The entry criterion upon which the NRC relies to justify eliminating EPZs—the 1 rem TEDE site boundary dose—is the same criterion the States challenge as unjustifiably high.[160] The NRC cannot premise the elimination of a safety backstop on an entry criterion that is itself without adequate justification in the record.[161]

Second, the proposed approach appears to assume that local emergency planning organizations and first responders will be able to determine what response capabilities are necessary without the benefit of objective NRC performance standards. The proposed rule requires coordination and arrangements with local responders but provides little guidance regarding what capabilities must ultimately exist, what planning assumptions should be used, what training should be provided, what equipment should be available, what protective actions should be contemplated, or how the adequacy of those arrangements will be evaluated by the NRC.

Historically, defined EPZs and associated emergency planning requirements provided a common planning basis for licensees, local governments, emergency management agencies, law enforcement organizations, fire departments, emergency medical services, and public health officials. Under the proposed rule, many of these decisions appear to be left to case-by-case negotiations between licensees and local jurisdictions. This approach effectively shifts responsibility for determining what constitutes an adequate radiological emergency response capability from the NRC to local communities.

This concern is particularly significant because many communities that may host advanced reactors have limited experience with radiological emergency planning and response. Unlike communities surrounding existing commercial nuclear power plants, many local governments, emergency managers, fire departments, law enforcement agencies, and emergency medical organizations may have little familiarity with radiological hazards, dose assessment, contamination control, protective action recommendations, emergency worker exposure management, or radiological consequence assessment. The Proposed Rule provides insufficient

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[159] 91 Fed. Reg. at 23,644-45; *see also* NRC, *Emergency Planning Zones*, https://www.nrc.gov/about-nrc/emerg-preparedness/about-emerg-preparedness/planning-zones ("A keystone of any plant's preplanned protective action strategy involves two emergency planning zones (EPZs) around the plant," which are a "plume exposure pathway extending about 10 miles in radius around the reactor site," and an "ingestion exposure pathway extending about 50 miles in radius around the reactor site.").

[160] *See* Section II(A), *supra*.

[161] *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (explaining that an agency must "examine the relevant data and articulate a satisfactory explanation for its action").

guidance regarding how such jurisdictions are expected to determine the capabilities necessary to protect emergency workers and the public.

Third, the proposed rule creates substantial uncertainty regarding how the NRC will make the reasonable-assurance finding required by 10 C.F.R. § 50.47(a)(1). That regulation provides that no operating license for a nuclear power reactor should be issued unless there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. For decades, the NRC has relied upon emergency planning requirements, emergency preparedness programs, and defined planning zones as key elements supporting that finding.

Although the proposed rule states that applicants and licensees must develop and maintain capabilities to protect emergency workers and the public, it does not establish objective criteria by which those capabilities will be evaluated. Nor does it explain what minimum level of offsite preparedness must exist before the Commission can conclude that adequate protective measures can and will be taken. Without such standards, the NRC has not adequately explained how it intends to satisfy its longstanding reasonable-assurance obligation.

Finally, the NRC's reliance on coordination agreements does not eliminate the possibility that protective actions may be necessary. The Commission acknowledges elsewhere in the Proposed Rule that applicants must coordinate with local emergency planning and offsite response organizations to ensure that protective measures can and will be taken as conditions warrant. If protective measures may be necessary, the NRC should establish objective criteria regarding the planning, training, equipment, communications, staffing, and response capabilities required to implement those measures successfully.

Accordingly, the States recommend that the NRC either retain defined emergency planning requirements for Part 57 facilities or establish clear, risk-informed, performance-based emergency preparedness criteria that specify the minimum capabilities required of licensees and offsite response organizations. At a minimum, the Commission should explain how local governments and emergency response organizations are expected to determine appropriate preparedness measures in the absence of a defined EPZ and how the NRC will evaluate whether those arrangements provide reasonable assurance that adequate protective measures can and will be taken to protect public health and safety.[162] An agency that reverses a decades-long regulatory practice without a reasoned explanation for the departure acts arbitrarily.[163]

The NRC must reinstate emergency planning requirements for Part 57 facilities—or, at minimum, explain with specificity how the adequate-protective-measures finding required by

[162] The NRC established its two-EPZ emergency planning framework in 1980 following the Three Mile Island accident and has maintained it continuously since. *See* Emergency Planning and Preparedness for Production and Utilization Facilities, 45 Fed. Reg. 55,402 (Aug. 19, 1980) (establishing the 10-mile plume exposure EPZ and 50-mile ingestion pathway EPZ as the baseline emergency planning framework for nuclear power reactors); 10 C.F.R. §§ 50.47, 50.54(q) (codifying the framework). The proposed rule provides no analysis of why the accident scenarios that produced this framework—and that led Congress and the NRC to embed it in statute and regulation—are inapplicable to microreactors that may hold up to 10 MTHM of fuel and operate without a resident inspector or defined EPZ.

[163] *Encino Motorcars, LLC v. Navarro*, 579 U.S. 211, 221–22 (2016); *see also FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009) (requiring that an agency changing course must "provide reasoned explanation" for the change).

10 C.F.R. § 50.47(a)(1) will be satisfied in the absence of a defined EPZ—before this rule may be finalized.

C. Weakened Backfit Provisions

The Proposed Rule's backfit provisions are not sufficiently justified on the record and also violate the AEA's adequate protection mandate. The Proposed Rule eliminates the requirement for the NRC to make affirmative safety determinations before a design is altered, and introduces other definitional ambiguities that may make it impossible for design defects to be redressed before microreactors have been manufactured and deployed.

The NRC claims that the Proposed Rule's backfit provisions at § 57.16 are "equivalent" to 10 C.F.R. § 50.109 for operating reactors, and to the issue-finality provisions in Part 52 for design certifications and manufacturing licenses.[164] That equivalence claim cannot withstand scrutiny.

Under 10 C.F.R. § 52.171(b)(2), an applicant seeking to depart from an approved manufacturing license design cannot proceed unless the Commission makes two affirmative findings: (i) the departure satisfies 10 C.F.R. § 52.7, meaning that the applicant has demonstrated "special circumstances" sufficient to justify deviating from the certified design; and (ii) those special circumstances outweigh any decrease in safety associated with the loss of standardization. The second finding is an essential safety backstop. It forces the NRC to explicitly weigh the safety value of design standardization—one of the primary risk reduction benefits of the manufacturing license pathway—against whatever justification is offered for the departure.

Proposed § 57.16(c) eliminates both requirements. In their place, it requires only that the joint construction permit/operating license (CP/OL) application include an analysis of departures with no requirement that the Commission make any affirmative safety determination before the departure is approved.[165] This is not a procedural adjustment; it is the elimination of the Commission's gatekeeping role over design changes.

The NRC contends that departures remain adequately controlled because they would be "subject to litigation" as CP/OL issues.[166] But shifting review from a mandatory Commission finding to an optional contested proceeding inverts the AEA's safety assurance structure: under § 52.171(b)(2), the burden of demonstrating that a departure is safe rests on the applicant and is resolved by the Commission before approval; under proposed § 57.16(c), the burden of challenging a departure rests on intervenors, and if no party raises the issue, the departure proceeds on the applicant's unreviewed self-submitted analysis. The fleet-deployment model makes this structural defect acute: under the proposed rule's 6-to-12-month licensing timeline, departures from a manufacturing license design could propagate across dozens or hundreds of deployed units before any contested proceeding develops a record on the first departure. The § 52.171(b)(2) framework was designed precisely to prevent that outcome by requiring Commission review *before* a departure takes effect.[167]

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[164] 91 Fed. Reg. at 23,637.

[165] *See* 91 Fed. Reg. 23,628, 23,637–38 (May 1, 2026) (acknowledging that proposed § 57.16(c) "would not include an equivalent requirement to § 52.171(b)(2)").

[166] *Id.* at 23,638.

[167] *See Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (explaining that an agency rule is arbitrary and capricious when it "entirely fail[s] to consider an important aspect of the problem").

A separate deficiency arises from proposed§ 57.16(c)'s exemption for departures from "operational programs or requirements . . . not material to the adequacy of the design" when the joint application includes proposed alternatives—with the applicant determining what is "not material." For microreactors, whose safety cases rely heavily on passive features, minimal operator action, and tightly integrated operational programs, the boundary between an "operational program" and a "design adequacy" element is not self-evident, and the proposed rule defines no NRC trigger for reviewing the applicant's materiality determination. The Commission, not the applicant, must make the materiality determination that defines the scope of required safety review.[168]

As Agreement State regulators, many of the States have a direct and immediate stake in these departure review deficiencies. Microreactors licensed under Part 57 fall under exclusive NRC jurisdiction,[169] but Agreement State byproduct material licensees are frequently co-located at universities, medical campuses, industrial facilities, and data centers — precisely the deployment environments Part 57 contemplates. at universities, medical campuses, industrial facilities, and data centers—precisely the deployment environments Part 57 contemplates.

i. E.O. 14300's Section 5(f) Directive and Its Dual Implications

Executive Order 14300 Section 5(f) directs the NRC to "[e]stablish stringent thresholds for circumstances in which the NRC may demand changes to reactor design once construction is underway."[170] Read in isolation, Section 5(f) appears to confer a benefit on industry by limiting the NRC's authority to impose post-construction design changes. But Section 5(f) also restricts the Commission only after the agency has satisfied the statutory prerequisites for locking in a design basis, and it simultaneously requires the NRC to ensure that any design-change limitations do not compromise adequate protection. The Proposed Rule satisfies neither condition.

First, the Proposed Rule does not establish the "stringent thresholds" Section 5(f) directs. The directive is a command to define—with specificity and rigor—the conditions under which the NRC may impose post-construction design changes. Proposed § 57.16 does not do this. Instead, it transplants the § 50.109 backfit analysis framework essentially intact.[171] Section 50.109 was developed for large LWRs with fixed sites, known fuel forms, and decades of operating experience. Applying it to microreactors—which use novel heat pipe cooling, high-assay low-enriched uranium (HALEU) fuel, TRISO fuel forms, factory manufacture, and autonomous operation—without any technology-specific threshold analysis does not constitute the "stringent" standard Section 5(f) directs. A threshold is not "stringent" merely because it was previously

[168] *See* AEA § 182(a), 42 U.S.C. § 2232(a) (requiring the Commission to independently find that operations "will provide adequate protection to the health and safety of the public"); *Union of Concerned Scientists v. NRC*, 735 F.2d 1437, 1444 (D.C. Cir. 1984) (NRC may not delegate its safety review function or rely on unverified applicant representations as a substitute for independent NRC analysis).

[169] 42 U.S.C. § 2021(c)(1).

[170] *Ordering the Reform of the Nuclear Regulatory Commission*, Exec. Order No. 14300, § 5(f), 90 Fed. Reg. 22,587, 22,589 (May 29, 2025).

[171] *See* 91 Fed. Reg. 23,628, 23,638 (May 1, 2026) (stating that proposed § 57.16 "would provide requirements that would be equivalent to those in § 50.109," without establishing technology-specific thresholds for the novel microreactor context).

applied to a different technology. The NRC's assertion of equivalency to § 50.109 is an exercise in label-substitution, not threshold development.

Second, and more fundamentally, Section 5(f)'s threshold requirement cannot be implemented in a manner that overrides the NRC's non-delegable obligation under AEA Section 182(a), 42 U.S.C. § 2232(a), to make an independent finding that operation of a licensed facility "will provide adequate protection to the health and safety of the public." Executive orders cannot override statutes, and Section 5(f) expressly provides that it "shall be implemented consistent with applicable law."[172] A threshold so stringent that it forecloses NRC-directed design changes necessary to achieve adequate protection would be unlawful.[173] The proposed rule preserves mandatory backfit authority on paper, but as discussed below, the structural features of Part 57's factory manufacture and multi-unit deployment model render that authority practically unenforceable in the circumstances most likely to require it.

The Proposed Rule's failure is therefore compound: it neither develops the technology-specific stringent thresholds Section 5(f) directs, nor does it explain how its existing backfit authority will remain operative in the novel deployment contexts Part 57 creates. The NRC must address both failures in the final rule.

ii. The Factory-Manufacture Problem: "Construction" Is Undefined and the Section 5(f) Trigger Is Unidentifiable.

Section 5(f) directs thresholds for design changes "once construction is underway." In the conventional Part 50 licensing framework, "construction" has a specific regulatory meaning: it begins upon issuance of a construction permit and is completed upon demonstration that construction conforms to the license at the readiness-for-operation finding.[174] In the Part 57 context, this framework breaks down in three distinct ways:

First, proposed Part 57 contemplates that microreactors will be manufactured at a factory under a manufacturing license (ML),[175] with the completed reactor then transported—potentially already fueled—to a deployment site.[176] Under this model, "construction" at the factory and "construction" at the deployment site are distinct activities occurring at different locations under potentially different licenses. The proposed rule does not identify which of these activities constitutes "construction" for purposes of the backfitting trigger in proposed § 57.16(a)(1)(i)(A)–(D).[177] These are four separate trigger dates—with different substantive tests applied depending

[172] Exec. Order No. 14300, § 6(b), 90 Fed. Reg. at 22,589. Section 182(a)'s adequate-protection mandate is applicable law that limits how the § 5(f) threshold may be set.

[173] *See Union of Concerned Scientists v. NRC*, 824 F.2d 108, 109 (D.C. Cir. 1987) ("Section 182(a) of the [AEA] provides the primary statutory standard relating to the Commission's mandate to ensure the safe operation of nuclear power plants."); proposed § 57.16(a)(1)(v), 91 Fed. Reg. 23,628, 23,729 (May 1, 2026) (correctly preserving mandatory backfit authority where "necessary to ensure that the facility provides adequate protection to the health and safety of the public").

[174] *See* 10 C.F.R. § 50.10(a); proposed § 57.75, 91 Fed. Reg. at 23,628, 23,735.

[175] *See* proposed subpart D, 91 Fed. Reg. 23,628, 23,742–56 (May 1, 2026).

[176] *See* 91 Fed. Reg. 23,628, 23,631 (May 1, 2026) (describing deployment model including "transporting fueled reactors to deployment sites (loaded with unirradiated or irradiated fuel)").

[177] *See* proposed § 57.16(a)(1)(i)(A)–(D), 91 Fed. Reg. 23,628, 23,729 (May 1, 2026) (listing issuance of construction permit, operating license, manufacturing license, and standard design approval as the four dates after which backfitting is triggered).

on which date governs—and the proposed rule provides no framework for determining which trigger applies when a fueled manufactured reactor is deployed to a new site.

Second, proposed § 57.16(c) creates a materially weakened departure review process for the precise circumstance where the factory-manufacture complication is most acute. When an applicant for a construction permit and operating license (CP/OL) references a manufacturing license, the applicant must include "analysis of each departure, both individually and cumulatively, from the design characteristics, site parameters, terms and conditions, or approved design of the nuclear reactor, nuclear plant, or manufactured reactor."[178] But critically, the proposed rule eliminates the requirement in § 52.171(b)(2) that the Commission itself affirmatively determine that such departures comply with safety requirements and that special circumstances justify any safety reduction.[179] The result is that departures from a factory-manufactured design—including departures that might otherwise require the NRC to impose design changes under Section 5(f) — proceed through litigation rather than through a Commission safety finding, and are effectively approved without NRC review if no intervenor challenges them. This is not a "stringent threshold" for demanding design changes; it is the elimination of the agency-initiated review mechanism most likely to generate such demands.

Third, and most critically for the Section 5(f) analysis, the factory-manufacture model means that by the time a deploying operator applies for a CP/OL referencing a manufacturing license, the reactor has already been built—and may already have been fueled.[180] If a design defect or safety-significant departure is identified in the CP/OL proceeding for the first deployed unit of a given design, the NRC's ability to demand design changes is effectively limited to that unit and any units not yet manufactured. For units already manufactured, already fueled, and in transport, the NRC's post-"construction" design change authority under proposed § 57.16 is practically inoperable—the reactor has already been built, the fuel has already been loaded, and demanding a design change requires a shutdown and modification of a completed unit. Proposed § 57.16 does not address this scenario.[181]

The NRC must address this gap by defining, in the final rule, what constitutes "construction" for Part 57 purposes, and specifying that: (a) factory manufacture activities—including fuel loading authorized under proposed §§ 57.155 and 57.172—are governed by the manufacturing license trigger date in proposed § 57.16(a)(1)(i)(C), such that the backfit standard applicable to factory-stage design changes is triggered upon issuance of the manufacturing license; and (b) deployment-site construction activities are governed by the construction permit trigger date in proposed § 57.16(a)(1)(i)(A), such that the backfit standard applicable to site-specific construction changes is triggered upon issuance of the construction permit for the deployment site. Without this clarification, a reactor may be manufactured, fueled, and placed in transport under a manufacturing license while it is simultaneously subject to a construction permit backfit analysis

[178] Proposed § 57.16(c), 91 Fed. Reg. 23,628, 23,729 (May 1, 2026).

[179] Proposed § 57.16(c), 91 Fed. Reg. at 23,638 (noting § 57.16(c) "would not include an equivalent requirement to § 52.171(b)(2), which requires the Commission to determine that departures will comply with the requirements in § 52.7").

[180] *See* proposed §§ 57.155, 57.172, 91 Fed. Reg. 23,628, 23,742–53 (May 1, 2026) (authorizing ML to cover fuel loading at the manufacturing facility).

[181] *See* 10 C.F.R. § 50.109(a)(1) (defining backfitting in terms of modification of or addition to systems, structures, and components of a *facility*—a definition that applies to a fixed facility at a licensed site and does not map onto the manufactured-and-transported microreactor deployment model).

at the deployment site—with no defined relationship between the two proceedings and no mechanism for the NRC to impose design corrections on units already manufactured before the construction permit proceeding identifies the defect. The NRC must also establish a specific procedure—with affirmative Commission-level review, not litigation-dependent departure analysis—for identifying and correcting safety-significant design defects in manufactured units that have not yet been deployed, applicable regardless of which trigger date governs the underlying licensing action.[182]

iii. The Deployed-Fleet Problem: Post-Deployment Design Change Authority Is Structurally Compromised.

Even setting aside the factory-manufacture complication, the proposed rule's backfit framework is structurally inadequate for the multi-unit, wide-geographic-distribution deployment model Part 57 contemplates. The proposed rule projects 2,235 microreactor applications over 40 years.[183] Under the manufacturing license and generic finality framework, multiple units of the same design may be deployed across dozens of states before any operating experience reveals a common design defect or safety-significant condition. The § 50.109 backfit framework was developed in a regulatory environment where each reactor was individually sited, individually reviewed, and individually constructed—one unit at a time, over years. Applying it to a fleet of manufactured, fueled, and field-deployed microreactors creates a multitude of problems:

Fleet propagation of defects. Proposed § 57.16(c) allows holders of operating licenses that reference the same manufacturing license to combine amendment applications for changes "that would affect the facility or the procedures described in the final safety analysis report for the manufacturing license."[184] This provision is designed to enable fleet-wide amendments efficiently —but it has no corresponding provision for the NRC to initiate a fleet-wide design correction when a safety-significant defect is identified in an already-deployed unit. In the Part 50 context, this function is served by 10 C.F.R. § 50.109(a)(1)(ii), which authorizes mandatory backfitting when "there is adequate reason to believe that such action is necessary to ensure that the facility provides adequate protection." In the Part 57 context, the same mandatory backfit authority theoretically exists at proposed § 57.16(a)(1)(v). But nothing in proposed Part 57 establishes the inspection and reporting infrastructure necessary to identify the safety-significant condition in the field that would trigger that authority. The proposed rule eliminates the requirement for a resident inspector,[185] relies on autonomous or remote operation,[186] and provides for "targeted inspections and performance oversight" rather than continuous on-site NRC presence.[187] In the absence of systematic in-field monitoring, the mandatory backfit trigger—a Commission "determination" that redesign is necessary—cannot be made on a timely basis.

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[182] *See* proposed §§ 57.16(a)(1)(i)(A), (C), 57.155, 57.172; 91 Fed. Reg. at 23,628, 23,729, 23,742–53; *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (explaining that an agency rule is arbitrary and capricious when it "entirely fail[s] to consider an important aspect of the problem"); *see also* AEA § 182(a), 42 U.S.C. § 2232(a) (requiring Commission to independently find adequate protection for each licensed facility); *see also* 10 C.F.R. § 50.109(a)(1).

[183] 91 Fed. Reg. 23,628, 23,680 (May 1, 2026).

[184] Proposed § 57.16(a)(4), 91 Fed. Reg. 23,628, 23,729–30 (May 1, 2026).

[185] S*ee* 91 Fed. Reg. 23,628, 23,636 (May 1, 2026).

[186] S*ee* 91 Fed. Reg. at 23,635–23,636.

[187] S*ee* 91 Fed. Reg. at 23,636.

Geographic distribution and State co-regulator notice. When the NRC imposes a backfit or design change demand on a reactor fleet distributed across multiple states, the Agreement States and host states have a direct interest in knowing the basis for and scope of that demand. Proposed Part 57 contains no provision for notification of affected states when the NRC initiates a mandatory backfit on a deployed Part 57 reactor. In the Part 50 context, this function is served by the resident inspector, by FEMA coordination under 10 C.F.R. § 50.47, and by the Reactor Oversight Process. None of these mechanisms are preserved in the Part 57 framework. The NRC must establish, in the final rule, a specific protocol for notifying affected Agreement States and host states when a mandatory backfit is initiated under proposed § 57.16(a)(1)(v) for any deployed Part 57 unit.

Generic finality as a bar to corrective action. Proposed § 57.16(b) preserves issue finality for matters resolved in prior proceedings on referenced approvals. When a deployed fleet has been licensed through a series of CP/OL proceedings that each achieved generic finality on a common design element, a subsequent NRC determination that the element requires correction will face issue finality objections from every operating licensee. The proposed rule provides no procedure for overcoming fleet-wide generic finality in the event of a common safety defect—a scenario the multi-unit manufacturing model makes more, not less, likely. The § 52.171(b)(2) framework was designed, in part, to prevent this problem by requiring the Commission to affirmatively evaluate departures *before* they received generic finality. By eliminating that requirement in proposed § 57.16(c), the NRC has created a structural path to fleet-wide generic finality on departures that received only litigation-dependent, rather than Commission-initiated, review.[188]

iv. Changes Requested

The States request that, if finalized, in the final Part 57 rule, the NRC:

- Define "construction" with specificity for the factory-manufacture deployment model, specifying that the manufacturing license trigger in proposed § 57.16(a)(1)(i)(C) governs factory manufacture and fuel loading, that the construction permit trigger in proposed § 57.16(a)(1)(i)(A) governs deployment-site construction, and that transport of a fueled manufactured reactor between those two events remains subject to the manufacturing license backfit standard. If the NRC declines to adopt this allocation, it must at minimum define "construction" as whichever of the four § 57.16(a)(1)(i) trigger dates occurs latest in time for any given unit.[189]
- Restore the § 52.171(b)(2) Commission-level affirmative safety determination requirement for all departures from a manufacturing license design, whether those departures are identified in a CP/OL application or discovered post-deployment. The litigation-dependent departure review in proposed § 57.16(c) does not satisfy the NRC's independent judgment obligation under AEA § 182(a), 42 U.S.C. § 2232(a).[190]

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[188] *See* proposed § 57.16(b), 91 Fed. Reg. 23,628, 23,729 (May 1, 2026); 91 Fed. Reg. at 23,638 (acknowledging that proposed § 57.16(c) eliminates § 52.171(b)(2)'s Commission-level safety determination requirement).

[189] *See* proposed § 57.16(a)(1)(i)(A)–(D); 91 Fed. Reg. at 23,729; Exec. Order No. 14300, § 5(f); 90 Fed. Reg. 22,587, 22,589 (May 29, 2025).

[190] *See* 91 Fed. Reg. 23,628, 23,638 (May 1, 2026).

- Establish a fleet-wide safety correction procedure applicable to deployed Part 57 units, including: (a) mandatory reporting requirements for safety-significant conditions identified in deployed units; (b) an NRC-initiated (not litigation-dependent) review process for fleet-wide corrections; (c) specific provisions for overcoming generic finality when a common design defect is identified across multiple deployed units; and (d) mandatory notification to Agreement States and host states when a mandatory backfit is initiated.[191]

- Develop technology-specific thresholds defining the conditions under which NRC will demand design changes in Part 57-licensed reactors, including separate threshold criteria for (a) pre-manufacture design changes, (b) post-manufacture pre-deployment design changes, and (c) post-deployment corrective actions, with those thresholds anchored to the specific passive-safety, HALEU-fuel, TRISO-fuel, heat-pipe-cooling, and autonomous-operation characteristics of the reactor types the proposed rule is intended to govern.[192]

D. Fewer Defense-in-Depth Layers and Deterministic Standards

The NRC prides itself on its long track-record of safety, which includes the approach of defense in depth:

> Defense in depth means inclusion of two or more independent and redundant layers of defense in the design of a facility and its operating procedures to compensate for uncertainties such that no single layer of defense, no matter how robust, is exclusively relied upon. Defense in depth includes, but is not limited to, the use of access controls, physical barriers, redundant and diverse safety functions, and emergency response measures.

10 C.F.R. § 53.020.

As DEEP points out, the combination of reduction of defense-in-depth reductions is problematic. Part 57 gives industry flexibility and control over "development of quality assurance programs, fitness-for-duty programs, staffing approaches, operational programs, and the use of industry-developed standards, while also relying on a performance-based oversight model that does not anticipate resident inspectors."[193] As DEEP notes in its comment: "DEEP is concerned that the cumulative effect of the many flexibilities already incorporated into 10 CFR Part 57 for microreactors and other reactors has not yet been demonstrated in practice. Several of the proposed provisions represent significant departures from established regulatory approaches that have historically functioned together as complementary layers of defense-in-depth."[194] While "[i]ndividually, each of these provisions may be reasonable and justifiable," "[c]ollectively, however, they represent multiple simultaneous reductions in prescriptive regulatory controls and independent oversight mechanisms that have traditionally provided assurance that safety standards are consistently implemented and maintained."[195]

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[191] *See* proposed §§ 57.16(a)(1)(v), 57.16(b), 57.16(c), 91 Fed. Reg. 23,628, 23,729–30 (May 1, 2026).

[192] *See* Exec. Order No. 14300, § 5(f), 90 Fed. Reg. 22,587, 22,589 (May 29, 2025); *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

[193] DEEP Comment at v.

[194] *Id.*

[195] *Id.*

The States echo DEEP's concerns with the reduction of layers of defense-in-depth. Without fixed standards that the NRC sets, industry has no incentive to take the most thorough or safe approach, which will doubtless be the more expensive one. The States request that the NRC reconsider the quantity and scope of the proposed reductions of defense-in-depth layers to account more transparently for the new technologies and designs that will be licensed under Part 57. Experimental and new technologies are not the right arena to be experimenting with fewer operational safety controls and regulations.

i. Single Failure Criterion

The NRC is inviting comment on whether deterministic standards like the "single failure criterion" are necessary for the licensing review of microreactors and reactors with comparable risk profiles. *See* Qu. 11-1. NRC describes the single failure criterion (SFC) as the "cornerstone of nuclear safety" that it has "historically" used.[196] In SECY-77-439, published in 1977, the NRC defines the SFC as follows: "Simply stated, application of the Single Failure Criterion requires that a system which is designed to perform a defined safety function must be capable of meeting its objectives assuming the failure of any major component within the system or in an associated system which supports its operation."[197] The SFC "has served well in its use as a licensing review tool to assure reliable systems as one element of the defense in depth approach to reactor safety."[198] The SFC is codified in Appendix A to 10 C.F.R. Part 50, as part of the general design criteria for nuclear power plants.

Despite its storied past, and continuing application to nuclear reactors in other parts of the federal code, the NRC characterizes the SFC in the Proposed Rule as "unnecessary to provide for reasonable assurance of adequate protection of public health and safety," and invites commenters to explain why it is no longer necessary, but can be "balanced" with risk assessment methods that industry selects.[199] Citing the 1977 Information Report, NRC states that "some licensing problems continue to exist in specific interpretation and applications of the single failure criterion for advanced reactor designs."[200] But the NRC does not explain how the SFC is inapplicable to the types of advanced nuclear reactors that would be licensed under Part 57, or how passive safety features that might be present in microreactor designs make the SFC an inappropriate tool.

The States echo DEEP's response to the NRC's question on the continued inclusion of SFC in licensing review: "DEEP believes that the Single Failure Criterion (SFC) should remain a fundamental safety consideration and design objective for 10 CFR Part 57 facilities. While the NRC's increasing use of risk-informed and performance-based approaches is appropriate and can provide valuable insights regarding plant safety, DEEP does not support treating the SFC merely as an optional or secondary design attribute. Rather, the SFC should continue to serve as an important deterministic element of the overall safety framework used to establish reasonable assurance of adequate protection."[201]

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[196] 91 Fed Reg. at 23,639, 23,682.

[197] NRC, *Information Report by the Office of Nuclear Reactor Regulation on the Single Failure Criterion*, SECY-77-439, Adams Accession No. ML060260236.

[198] *Id.*

[199] 91 Fed. Reg. at 23,683.

[200] 91 Fed. Reg. at 23,682.

[201] DEEP Comment at xxxviii-xxxix.

ii. Choice of Analysis for Site Boundary

The proposed rule's delegation of accident analysis methodology to applicant discretion is independently defective under the APA. As noted above, the NRC acknowledges that "[t]wo identical reactor designs could, in principle, yield different site boundary distances and safety classifications depending on whether their analyses employ the MHA or MCA methodology."[202] An agency rule that produces materially different safety outcomes for identical facilities based solely on applicant preference—with no regulatory floor and no prescribed minimum conservatism—fails the APA's requirement that the agency itself resolve the major safety questions its rulemaking presents.[203] The NRC has not explained, and the proposed rule does not establish, any basis for concluding that the range of site boundaries and SSC classifications producible under applicant-selected methodologies all satisfy the AEA Section 182(a) adequate-protection standard.[204] That omission is an independent ground for remand.[205]

iii. Remote Operations

The NRC's proposal to defer to industry regarding whether to allow remote and autonomous operations without first establishing the technical and regulatory framework necessary to verify the safety of such operations is itself arbitrary and capricious. The NRC poses Question 10 to commenters asking whether remote and autonomous operations should be permitted—but an agency that does not yet have the technical basis to answer that question has also not established the basis to license facilities designed around the assumption that such operations are safe. NRC SECY-20-0093 paper[206] identified staffing, training, and personnel qualification as well as autonomous and remote operations as among the ten unresolved policy areas requiring resolution before commercial microreactor licensing. The fact that these issues remain unresolved, and the proposed rule is seeking comment on whether to permit them—rather than prescribing safety standards for them—demonstrates that the technical basis for the proposed Part 57 framework is incomplete. The Commission cannot issue a final rule that licenses facilities designed for remote or autonomous operation without first establishing the safety criteria, inspection methodology, and failure-mode characterization that such operations require.[207]

The States also incorporate DEEP's response to Question 10-1. In particular, the States agree that

> the NRC should establish clear limits on the scope of remote and autonomous operations, particularly for functions that directly affect reactor safety, radioactive material control, and security. This is particularly important for manufacturing licenses and fleet-based deployment models, where a common design, software

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[202] 91 Fed. Reg. 23,628, 23,639 (May 1, 2026).

[203] *See Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (rule is arbitrary and capricious when the agency "entirely fail[s] to consider an important aspect of the problem"); *see also* 5 U.S.C. § 706(2)(A).

[204] 42 U.S.C. § 2232(a).

[205] *See Encino Motorcars, LLC v. Navarro*, 579 U.S. 211, 224 (2016) ("It is not the role of the courts to speculate on reasons that might have supported an agency's decision" when the agency fails to supply a reasoned explanation.).

[206] NRC, SECY-20-0093, *Policy and Licensing Considerations Related to Micro-Reactors* (Oct. 6, 2020), Adams Accession No. ML20129J985.

[207] AEA § 182(a), 42 U.S.C. § 2232(a); *see also Union of Concerned Scientists v. NRC*, 824 F.2d 108, 109 (D.C. Cir. 1987).

> platform, communications architecture, or control system may be deployed across numerous facilities. While the consequences associated with a successful cyberattack against any single low-consequence reactor may be limited, the potential exists for a sophisticated attack to affect multiple facilities simultaneously.[208]

The States also agree that "safety functions be subject to predefined operational limits that cannot be bypassed trough remote commands," and that applicants "identify the qualifications, training, and availability of personnel who would be dispatched to assume local operational control if remote control capabilities are lost."[209]

The States also discuss their concerns with remote operations in the context of cyber security below in Section V(F).

E. Expedited NRC Review of Experimental Technologies

In light of the foregoing, it is arbitrary and capricious for the NRC to provide a rapid licensing track for microreactors, when most, if not all, of these proposed technologies remain untested, or tested only in a research, as opposed toa commercial, context.[210]

According to the Idaho National Laboratory, there are no microreactors currently operating in the United States.[211] The smallest U.S commercial power reactors are at Prairie Island, Minnesota, where two reactors generate approximately 593 MW each (compared with 1-20 MW capacity of microreactors).[212]

Several significant unresolved technical issues remain specific to microreactor technologies, which are independent of the regulatory framework used to license them. The primary cooling mechanism using heat pipes for leading microreactor designs remains incompletely characterized at reactor-relevant conditions, with known gaps in the technical data needed to validate safety analysis codes. The INL Phenomena Identification and Ranking Table (PIRT) for heat pipes, INL/RPT-25-84171 (Apr. 2025), identified unresolved phenomena in heat pipe microreactor behavior including heat transfer mechanisms under transient and accident conditions, fluid dynamics, phase change dynamics, and material performance at high temperatures, and the NRC's assessment confirms that equivalent operational experience and validation datasets comparable to those available for light water reactors do not yet exist for heat pipe designs.[213]

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[208] DEEP Comment at xxxiv

[209] *Id.* at xxxv.

[210] *See, e.g.*, U.S. Energy Information Administration, *Small Modular Reactors and Microreactors Under Development in the United States* (Apr. 27, 2026), https://www.eia.gov/todayinenergy/detail.php?id=67584 ; International Atomic Energy Agency, *What are Molten Salt Reactors?* https://www.iaea.org/newscenter/news/what-are-molten-salt-reactors; Terrapower.com, *The Plant,* https://www.terrapower.com/natrium/ (last visited March 3, 2026) (explaining public-private investment in "first-of-a-kind" reactor technologies and describing "breakthrough innovation").

[211] Idaho National Laboratory, *Microreactors: Frequently Asked Questions*, https://inl.gov/trending-topics/microreactors/faqs/

[212] U.S. Energy Information Administration, *Small Modular Reactors and Microreactors Under Development in the United States* (Apr. 27, 2026), https://www.eia.gov/todayinenergy/detail.php?id=67584

[213] *See* Oak Ridge National Laboratory, *Assessment of Microreactor Safety Analysis Challenges and Approaches* (ORNL/TM-2022) (Sept. 2023), https://info.ornl.gov/sites/publications/Files/Pub204154.pdf (identifying

Fuel qualification for HALEU, which is required for most microreactor designs at enrichment levels between 5% and 19.75%, remains incomplete: irradiation testing databases are insufficient to support broad licensing submittals without additional qualification campaigns, the domestic HALEU fuel fabrication supply chain is only beginning to become operational, and no commercial-scale qualification data exists at the burnup levels anticipated for long-cycle microreactor operation.[214]

The management and ultimate disposal of microreactor spent fuel present additional unresolved technical problems including that TRISO fuel—the predominant fuel form across leading microreactor designs—discharges approximately 10 to 16 times the volume of spent fuel per unit of energy produced compared to conventional light water reactor fuel, existing dry storage systems are not qualified for TRISO spent fuel, the long-term performance of TRISO coatings in disposal environments is not fully characterized, and no demonstrated repository pathway exists for TRISO or other advanced reactor fuel forms.[215] Autonomous and remote operation introduce unresolved questions about failure mode characterization, how problems are detected and diagnosed without on-site human presence, and what institutional controls substitute for the defense-in-depth function historically served by licensed operators.[216] These issues reflect genuine limitations in the technical knowledge base that must be resolved through demonstration, testing, and qualification before microreactors can be reliably licensed, operated, and decommissioned at commercial scale.[217]

Providing a fast regulatory track with reduced safety and security safeguards for experimental, commercially untested nuclear reactors is arbitrary and capricious and lacks sufficient justification in the record.

The NRC does not justify the risk of expedited licensing of experimental reactors with any balanced cost-benefit analysis. The NRC does not consider the potential costs and risks to public health and the environment, as well as economic burdens on States, tribes, and local governments. The cost-benefit analysis the NRC has done here touts only the benefits to industry, not to the

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modeling gaps in radionuclide transport, accident sequence definition, and heat transfer coefficient validation for heat pipe microreactors).

[214] *See* National Academies of Sciences, Engineering & Medicine, *Merits and Viability of Different Nuclear Fuel Cycles and Technology Options and the Waste Aspects of Advanced Nuclear Reactors*, ch. 5 (2023).

[215] *See* DOE/Sandia National Laboratories, *Advanced Reactors Spent Fuel and Waste Streams Disposition Strategies* (2022) (identifying regulatory guidance gaps for TRISO, metallic, and molten salt spent fuel); NRC, Disposal Options and Potential Challenges to Waste Disposition from Advanced Reactor Fuel Types, CNWRA Report (2020) (ML20237F397); Savannah River National Laboratory, New Technology Solves Unique Spent Nuclear Fuel Storage Issues (Mar. 2025) (ongoing DOE-funded research to address TRISO SNF storage, with project completion targeted for 2027).

[216] *See* NRC, SECY-24-0008, *Micro-Reactor Licensing and Deployment Considerations: Fuel Loading and Operational Testing at a Factory* (ADAMS Accession No. ML23207A252); Staff Requirements Memorandum, SRM-SECY-24-0008 (June 17, 2025) (ML25168A133).

[217] *See also* Congressional Research Service, *Advanced Nuclear Reactors: Technology Overview and Current Issues* (Feb. 17, 2023), https://apps.dtic.mil/sti/trecms/pdf/AD1193834.pdf (explaining that ,"[b]ecause many of these technologies are in the design phase, the operational safety of many of these systems has not yet been established in practice," and identifying "inherent safety challenges" related to the "chemical properties of various advanced coolants, fuels, and moderators"); Idaho National Laboratory, *Initial Evaluation of Fuel-Reactor Concepts for Advanced LEU Fuel Development* at 29 (Feb. 2020), https://inldigitallibrary.inl.gov/content/uploads/50/2026/04/Sort_22041.pdf (identifying unresolved problems with corrosion in molten salt reactors).

public or to other "affected attributes." *See also* § V, *infra*.

The States' concerns with expedited review are exacerbated by the additional context of reduced fee applications for advanced nuclear reactors pursuant to the ADVANCE Act and NEIMA.[218] The States are concerned that reduced fees will inevitably lead to fewer resources and less staff availability to undertake a thorough and comprehensive review of the voluminous applications for MLs, CPs, and OLs that it anticipates, on the expedited Part 57 timeframe. The States are concerned that the NRC's historically thorough review and high safety standards will be compromised at a time when they are most needed.

The NRC solicited comment on whether part 57 should interface with and cross-reference 91 Fed. Reg. 10,450 (Mar. 3, 2026), so that microreactor license proceedings be "highly expedited." *See* Qu. 9-1. The States strongly advise against adopting a highly expedited hearing process for microreactor deployments, given the experimental nature of microreactors and the diverse geographic areas to which they may be deployed. States, tribes, and local governments must be given ample notice and sufficient time to examine the proposed licenses to ensure that people and the environment, not just industry, have a chance to be heard, and to be protected, in future licensing proceedings. The States agree with and support DEEP's response to Question 9-1, in particular that:

> [E]ligibility for highly expedited proceedings should remain carefully bounded. Unlike the NRC's traditional amendment process, which provides a full, deliberative, and publicly accessible review that may include written filings, motions, discovery, cross-examination, and formal hearings over a period of months, highly expedited proceedings significantly compress adjudicatory timelines and procedural opportunities. While such proceedings appropriately preserve notice and hearing rights, they typically rely upon accelerated schedules, limit written submissions, restrict discovery and cross-examination opportunities, and provide a more narrowly focused hearing process. As a result, DEEP believes highly expedited treatment is most appropriate where the NRC has already resolved the underlying technical and policy issues through previous licensing actions or where the proposed amendment presents little potential to alter the facility's licensing basis, risk profile, or environmental impacts.
>
> Accordingly, DEEP recommends that highly expedited proceedings be reserved for applications and amendments where there is a strong regulatory basis for concluding that significant issues have already been reviewed and resolved, and where meaningful public participation can still occur despite the compressed schedule. Amendments involving novel technical issues, changes to fundamental safety assumptions, significant operational changes, new environmental considerations, or matters likely to generate substantial stakeholder interest should continue to receive review through the NRC's more comprehensive adjudicatory processes. This approach would preserve the efficiency benefits of expedited proceedings while ensuring that transparency, public participation, and regulatory

[218] NRC, *Fee Schedules; Fee Recovery for Fiscal Year 2025*, 90 Fed. Reg. 26,730 (Jun. 24, 2025).

confidence are maintained for decisions involving potentially significant safety, environmental, or policy considerations.[219]

Combined with the generic finality provisions the Proposed Rule contemplates, the addition of highly expedited proceedings would be fatal to the notice and public participation mandates of the APA and AEA. And, in light of the experimental nature of advanced nuclear reactors and microreactors, the NRC fails to adequately justify an expedited licensing framework of 6-12 months, let alone a highly expedited framework.

III. The Proposed Rule Violates Statutory Notice and Public Participation Requirements.

That the Proposed Rule gives insufficient notice to the public given its broad scope is significant: it contemplates several never-before tried approaches to licensing and regulation, in an industry that is still developing the technologies in question. Not only that, but it comes in the middle of sweeping changes to nuclear regulations from the NRC, the DOE and the DOD. These changes are ongoing and unprecedented. The agencies have not provided sufficient time for interested parties to assess and address the many interactions and impacts of the changing nuclear regulatory landscape. Nor does it appear from the Proposed Rule and draft Regulatory Analysis that the NRC has a better grasp of the full impact of all of these interrelated regulatory changes: the draft Regulatory Analysis includes no cumulative effects of regulation (CER) analysis as it relates to the States for Part 57, let alone one that analyzes the comprehensive impact of: the NRC's *Risk-Informed Technology-Inclusive Regulatory Framework*,[220] the NRC's *Modernizing NRC Regulations for Byproduct Material Use* proposed rule,[221] the NRC's *NRC Reviews of Reactor Designs Previously Authorized by U.S. Department of Energy or Department of War* rule,[222] the NRC's *Sunset Rule*,[223] the DOE's *Zero-Based Regulating* rule,[224] the DOE's *Categorical Exclusion for Advanced Nuclear Reactors* direct final rule,[225] and the anticipated NRC NEPA changes.[226] *See* § VII, *infra*.

The NRC has provided a webpage listing the regulatory changes that have come and those that are still in store, but this list, and the various rulemaking notices associated with it, lack any analysis of the ways in which these rulemakings interact with and affect each other, or indeed, how they affect Agreement States and other non-industry stakeholders.[227]

The Proposed Rule's impact on the nuclear regulatory landscape, standing by itself, merits far more consideration than can properly be given in 45 days. But taken in the context of all the other changes, the Proposed Rule presents a significant burden to the States in terms of regulatory analysis. The States also have to assess whether conforming changes to state rules and regulations are necessary. Agreement States have to review materials regulations. The NRC Sunset Rule and

[219] DEEP Comment at xxxi.
[220] 91 Fed. Reg. 15,793 (Mar. 30, 2026).
[221] 91 Fed. Reg. 28,916 (May 18, 2026).
[222] 91 Fed. Reg. 16,584 (Apr. 2, 2026)
[223] 90 Fed. Reg. 55,621 (Dec. 3, 2025)
[224] 91 Fed. Reg. 31,869 (May 29, 2026)
[225] 91 Fed. Reg. 4550 (Feb. 2, 2026).
[226] *See* NRC, *Wholesale Revision of Regulations Under Executive Order 14300*, https://www.nrc.gov/about-nrc/governing-laws/advance-act/wholesale-revision-regs.
[227] *Id.*

the DOE Zero-Based Regulation Rule will introduce complexity and may call into question the validity of numerous State Agreement programs. To ask Agreement States to comment on these changes—which each constitute major federal actions—in such a short period of time and often without full APA notice and comment is a violation of the APA, NEPA, and the AEA.

On May 11, 2026, DEEP requested that the NRC extend the comment period from 45 days to 90 days, but its request was denied with no explanation or justification.[228] DEEP pointed out the concerning "current volume and pace of concurrent NRC rulemakings—including multiple significant proposed and direct final rules underway simultaneously," which it explained "limits the ability of states and other stakeholders to adequately evaluate complex technical and policy changes."[229] It explained: "The proposed Part 57 rule alone spans numerous regulatory topics with potentially far-reaching operational and policy implications and includes a request for comments on 12 discrete questions. Adequate review of these issues requires coordination across multiple state agencies and technical disciplines, as well as consultation with local governments and affected stakeholders."[230] This request was denied without explanation on May 15, 2026.[231]

In its full comment letter, DEEP made general requests of the NRC pertinent to this issue, which the States echo here. DEEP and the States request that the NRC:

- Provide public comment periods that are sufficiently long to allow Agreement States and other stakeholders to thoroughly review, analyze, and assess the technical, legal, operational, and implementation impacts of proposed rulemakings, particularly where changes are complex, far-reaching, or issued concurrently with other major regulatory actions;
- Sequence and pace rulemakings to provide adequate timeframes for review and analysis between significant regulatory changes and avoid requiring Agreement States to review and implement multiple complex rulemakings simultaneously; and
- Limit the use of direct final rules to truly non-controversial or minor administrative changes, ensuring that substantive or technically complex revisions are subject to full notice-and-comment rulemaking.[232]

The Proposed Rule therefore violates the fair notice and participation mandates in various statutes: the APA, AEA/Hobbs Act, NEPA, and NHPA.

A. APA Notice Concerns

Under the APA, a notice of proposed rulemaking must describe "the terms or substance of the proposed rule or a description of the subjects and issues involved."[233] A rule is arbitrary and capricious if it fails to give interested parties adequate notice of the agency's proposed course and a fair opportunity to comment.[234] The logical-outgrowth doctrine requires that a final rule must be

[228] NRC-2025-0379-0025.
[229] *Id.*
[230] *Id.*
[231] NRC-2025-0379-0036, Adams Accession No. ML26138A171.
[232] DEEP Comment at 3.
[233] 5 U.S.C. § 553(b)(3).
[234] *Int'l Union v. MSHA*, 626 F.3d 84, 94 (D.C. Cir. 2010).

the "logical outgrowth" of the proposed rule, such that a party could have anticipated the final rule and meaningfully commented on it.[235] The Proposed Rule fails the APA's notice requirements in three respects: (i) it leaves the term "comparable risk profile" entirely undefined, precluding meaningful comment on the scope of the licensing pathway; (ii) it relies on industry materials not in the public record as the foundation for its cost-benefit analysis; and (iii) it provides a 45-day comment period for a rulemaking of unprecedented scope at a time when Agreement States are simultaneously processing at least six other major nuclear regulatory changes.

i. The term "Comparable Risk Profiles" is Impermissibly Vague to Provide Sufficient Notice Under the APA.

Apart from the States' concerns regarding the timeline for public participation in this rulemaking, the Proposed Rule does not give fair or adequate notice under the APA. It does not specify what criteria might give a non-microreactor a "comparable risk profile" to a microreactor, and thus qualify for Part 57 licensure. This will likely mean that applications will be decided on an ad-hoc, case-by-case basis, making it incredibly difficult or impossible for stakeholders to review and comment on those applications.[236] The vagueness of this undefined term—which allows for the fast-track licensing of reactors that Congress did not foresee in the ADVANCE Act or NEIMA—means that the public does not have adequate notice of the types of reactors that may be eligible for this licensure pathway.

The clause also lacks any statutory anchor. AEA Section 11(cc), 42 U.S.C. § 2014(cc), defines "utilization facility" without reference to risk profiles or comparative performance metrics, and neither NEIMA nor the ADVANCE Act authorized the NRC to create sub-categories of utilization facilities subject to reduced regulatory protection based on a self-defined risk comparison.

The States are concerned that finalizing the clause without objective criteria may also foreclose future judicial review, though the States do not concede that it does. The Proposed Rule's generic finality mechanism at proposed § 57.142(e)—which treats design characteristics, site parameters, and other matters resolved in a construction permit proceeding as finally determined and unavailable for challenge in associated operating license proceedings—combined with the Supreme Court's holding in *NRC v. Texas*, 605 U.S. 665 (2025), means that a contention challenging a future "comparable risk profile" eligibility determination may be barred as outside the scope of an OL proceeding under 10 C.F.R. § 2.309(f)(1)(iii). This forecloses meaningful review at exactly the stage—the OL proceeding—at which site-specific conditions and actual reactor performance data first become available. Additional finality risks arise under proposed § 57.175, which addresses finality of manufacturing license determinations, and proposed § 57.16(b)(2), which governs finality for matters resolved where a standard design approval or combined license is referenced, depending on the licensing pathway employed.[237] Across all of these pathways, the States are concerned that the outer limits of the "comparable risk profile" clause are likely contestable only now—not after finalization, though the States do not concede this. The NRC must therefore revise the Proposed Rule to clarify that eligibility determinations under the "comparable risk profile" clause are not subject to the generic finality provisions under

[235] *Long Island Care at Home, Ltd. v. Coke*, 551 U.S. 158, 174 (2007).
[236] *See* Schofer Comment § 2.
[237] *See* proposed §§ 57.16(b)(2), 57.175, 91 Fed. Reg. 23,628, 23,729, 23,751 (May 1, 2026).

proposed §§ 57.142(e), 57.175, or 57.16(b)(2), and remain open to site-specific challenge in each OL or deployment in which a reactor's eligibility for Part 57 licensing is material.

ii. Reliance on Industry Materials not in the Public Record

The Proposed Rule draws on industry materials that are not in the public record, in violation of the APA. The draft Regulatory Analysis states that, "[i]n modeling the deployment of microreactors, the NRC drew on information from Nuclear Energy Institute's July 31, 2024, Proposal Paper on Rapid High-Volume Deployable Reactors (RHDRA) and other advanced reactor concepts, as well as related industry input."[238] However, the "NEI RHDRA paper is not on the public docket, has not been subjected to independent peer review, and was prepared by the trade association representing vendors seeking the regulatory framework being analyzed. Using an interested party's own demand forecast as the primary basis for a cost-benefit analysis is methodologically circular."[239]

If the NRC relied on an industry white paper for its deployment forecast, and relied on "related industry input," it must specify what information it relied on for what analysis.

iii. Generic Finality and Combined CP/OL Gives Insufficient Notice to the Public of the Breadth and Scale of the Proposed Rule.

In Question 3-4, the NRC seeks comment on whether "a single notice in the Federal Register for each joint application for a construction permit and associated operating license(s) [is] sufficient and appropriate notice for large geographic areas? Or should additional measures be employed to put the public on notice of a hearing opportunity for a large geographic area, and if so, what measures?"[240]

The States do not believe that a single notice for a combined CP/OL is sufficient. If a single CP/OL may be deployed at several areas, this is a major action that must undergo full NEPA environmental review with a draft EIS and full public notice and comment.

The States incorporate here DEEP's response to NRC's Question 3-4:

> DEEP does not believe that a single notice in the Federal Register is sufficient to ensure meaningful public awareness of hearing opportunities associated with a construction permit and operating license application that encompasses a large geographic area.
>
> DEEP recognizes that publication in the Federal Register serves an important legal notice function. However, members of the public, local governments, Tribal governments, and other stakeholders are unlikely to routinely monitor Federal Register notices. For projects involving nuclear facilities, meaningful public participation requires that potentially affected communities receive notice through multiple communication channels that are more accessible and likely to reach interested stakeholders.

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[238] Regulatory Analysis at 13 (citing NEI, *Regulation of Rapid High-Volume Deployable Reactors in Remote Applications (RHDRA) and Other Advanced Reactors* (July 2024), ML24213A337).

[239] Schofer Comment at § 5(c) n.33.

[240] 91 Fed. Reg. at 23,680.

> DEEP believes that public engagement and transparency are critical to the successful deployment of advanced nuclear technologies. Connecticut's recent efforts to evaluate advanced nuclear energy through a community-centered framework have demonstrated that public confidence is strengthened when communities are provided timely, accessible information and meaningful opportunities to participate in decision-making processes. Ensuring robust notice of licensing and hearing opportunities is therefore an important component of maintaining trust in both the technology and the regulatory process.
>
> Accordingly, DEEP supports the use of additional notification measures beyond publication in the Federal Register. At a minimum, the NRC should provide direct notification to the Governor-appointed State Liaison Officer in each state that could potentially be affected by the proposed construction permit, operating license, or associated hearing process. State Liaison Officers serve as the NRC's designated point of contact with state governments and are well positioned to facilitate communication between the NRC and state agencies.
>
> DEEP also recommends that notice be provided directly to the environmental protection, energy, emergency management, and public health agencies of potentially affected states. These agencies frequently serve as the primary point of contact for state review, public inquiries, and coordination regarding nuclear and radiological matters and can help ensure that relevant information reaches local governments, stakeholders, and interested members of the public.[241]

B. The Rulemaking Gives Insufficient Notice Under NEPA

Public involvement by States, Local Governments, and our residents is critical to identifying and evaluating public health and environmental issues of local or statewide concern that may result from federal actions such as NRC's promulgation of Part 57, which also includes provision for the use of categorical exclusions. Public participation provides a critical tool for identifying shortfalls in the agency's analyses, spotting missing issues, and providing additional information that the agency may not have known existed. For these reasons, NEPA prioritizes democratic values by providing a central role for public participation in the environmental review process. [242]

The NRC's process for proposing to adopt Part 57 fails to provide the level of public participation required by NEPA, which along with rulemakings such as the DOE's categorical exclusion for advanced nuclear reactors, which can be adopted by the NRC pursuant to the DOE/DOD Previous Authorization Rule, has failed to provide the level of public participation required by NEPA.

A forty-five-day comment period is not sufficient to solicit meaningful public comment on the proposed promulgation of an entirely new part of the C.F.R., particularly given the novelty of microreactors and advanced nuclear reactors in general. Microreactors are a diverse group of

[241] DEEP Comment at ix.

[242] *Kleppe v. Sierra Club*, 427 U.S. 390, 409 (1976) (quoting Conference Report on NEPA, 115 Cong. Rec. 40416 (1969) (internal quotations omitted).

reactors with diverse fuel sources and the potential for environmental impacts. Because no commercial reactors have been built in the United States there is not much data available on their potential environmental impacts. Forty-five days is an insufficient amount of time for public commenters to collect this information and provide it to the NRC.

Additionally, NRC proposes this rulemaking along with rulemakings such as the DOE's categorical exclusion for advanced nuclear reactors, which can be adopted by the NRC pursuant to the DOE/DOD Previous Authorization Rule. This makes the scope of impacts from the adoption of Part 57 very broad. A forty-five-day comment period is insufficient for the public to submit meaningful and comprehensive comments on the potential cumulative impacts of these regulatory changes, especially in light of the lack of analysis on these impacts from the NRC.

The inadequacy of the 45-day comment period is also insufficient under NEPA, because Part 57 proposes to authorize categorical exclusions from NEPA review for future microreactor licensing proceedings; therefore, this comment period is the only opportunity for the public to provide the NRC with site-type-specific environmental information before the agency forecloses project-level environmental review for an entire class of reactors.[243] NEPA's "action-forcing" purpose—to ensure that "important effects will not be overlooked or underestimated, only to be discovered after resources have been committed or the die otherwise cast,"[244]— is defeated when the comment period on the rulemaking that establishes a categorical exclusion is too short for commenters to assemble and submit the environmental data the exclusion would otherwise require.

A minimum of ninety days, as DEEP requested, should have been provided for the public to comment on the significant legal and factual issues implicated by proposed Part 57.

IV. The Proposed Rule Violates the National Environmental Policy Act.

The National Environmental Policy Act (NEPA) supports informed decisionmaking by federal agencies by asking federal agencies to look before they leap. NEPA thus has "twin aims": an agency must "consider every significant aspect of the environmental impact of a proposed action" and "inform the public that it has indeed considered environmental concerns in its decisionmaking process."[245] Where an agency does not follow this mandate to consider reasonably foreseeable environmental effects before taking action, irreparable environmental harm can follow. In order to avoid this, NEPA requires a public and meaningful environmental review process. Rather than follow this measured approach, the NRC's rulemaking does not meet the transparency and informed decision-making mandates in NEPA. The Proposed Rule violates NEPA in two ways: first, the Environmental Assessment (EA) of the proposed action is deficient; and second, the proposed categorical exclusion is impermissible under NEPA.

A. The environmental assessment fails to take the required hard look at reasonably foreseeable environmental impacts from the proposed rapid and high-volume deployment of microreactors.

NEPA requires federal agencies to assess the "reasonably foreseeable environmental effects of the proposed agency action." [246] In doing so, the agency must take a "hard look" at the

[243] *See* proposed 10 C.F.R. § 57.350, 91 Fed. Reg. 23,628, 23,749 (May 1, 2026).
[244] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).
[245] *Balt. Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 97 (1983).
[246] 42 U.S.C. § 4332(C)(i).

environmental impacts.[247] The agency "may not rely on incorrect assumptions or data" in its analysis and ultimate finding of no significant effects.[248] Put plainly, the Agency action must be "reasonable and reasonably explained."[249] The NRC includes a brief EA of the proposed action in the notice of the proposed rule.[250] However, this EA fails to consider necessary environmental impacts or provides limited analysis of the impacts it does analyze. The NRC is proposing "rapid licensing of new microreactors and other reactors with comparable risk profiles and for high-volume deployment of these reactors" with insufficient consideration for how this increased deployment will impact the environment.[251] In order to comply with NEPA, the NRC must provide a more robust analysis of environmental impacts assessing the potential environmental impacts from such a rapid and wide-ranging deployment of novel microreactors.

i. The EA fails to consider reasonable alternatives

NEPA requires federal agencies to consider reasonable alternatives to a proposed action when developing an EIS.[252] The NRC incorporates this requirement into its own NEPA implementing regulations when conducting an environmental assessment (EA).[253] However, the NRC considered only two alternatives: the proposed action and the no action alternative. [254] This undermines the application of NEPA and violates NRC's own regulations.

Considering only the proposed action and a no-action alternative is not a reasonable range of alternatives. Reasonable alternatives to the proposed action could include "(i) extending the existing NPUF Final Rule to cover commercial microreactors with appropriate technology-specific modifications; (ii) using Part 53 with a microreactor-specific subpart; (iii) developing a Part 50, Appendix N–style standardization regulation tailored to microreactors; or (iv) using existing manufacturing license authorities under Part 52, Subpart F as the principal vehicle."[255]

By failing to consider these and other potential alternatives, the NRC has failed to meet one of the core requirements of NEPA and its own regulations.[256] The NRC must conduct a robust analysis of reasonable alternatives to the proposed action.

ii. The NRC fails to assess the potential impacts from increased generation of hazardous waste, radioactive waste, and spent nuclear fuel.

The Notice contains no analysis of potential impacts from increased production of hazardous waste, radioactive waste, and spent nuclear fuel as a result of the rapid and high-volume deployment of microreactors under the Proposed Rule. The types of potential hazardous materials

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[247] *Env't Def. Ctr. v. Bureau of Ocean Energy Mgmt.,* 36 F.4th 850, 872 (9th Cir. 2022).

[248] *Id.* (citing *Native Ecosystems Council v. U.S. Forest Serv.*, 418 F.3d 953, 964 (9th Cir. 2005)).

[249] *Seven Cnty. Infrastructure Coal. v. Eagle Cnty., Colorado*, 605 U.S. 168, 180 (2025).

[250] 91 Fed. Reg. at 23,684-94.

[251] 91 Fed. Reg. at 23,628.

[252] 42 U.S.C. § 4332(C)(iii).

[253] 10 C.F.R. § 51.30(A)(1)(ii).

[254] *See* 91 Fed. Reg. at 23693; Draft Regulatory Analysis § 1.1, Adams Accession No. ML26111A076 (considering only no-action alternative to the Proposed Rulemaking).

[255] Schofer Comment § 5(i).

[256] Y*akima Valley Cablevision, Inc. v. FCC*, 794 F.2d 737, 746 & n.36 (D.C. Cir. 1986) (The "failure of an agency to consider obvious alternatives has led uniformly to reversal.") (collecting cases); *see, e.g.*, *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 48 (1983) (explaining that the failure to "even consider the possibility" of "alternative way of achieving the objectives of the Act" was arbitrary and capricious).

that could be generated beyond radioactive waste and spent nuclear fuel are also not identified by the NRC. This makes it impossible to identify what unique concerns may exist. It is reasonably foreseeable that significant quantities of hazardous waste, radioactive waste, and spent nuclear fuel will be produced, yet the NRC ignores the potential impacts in violation of NEPA.

The NRC also fails to mention how those waste streams will be managed in light of the lack of long-term nuclear waste storage facilities in the United States. Under the Nuclear Waste Policy Act of 1982 (NWPA), the DOE has the responsibility for managing commercial and federal nuclear waste, as well as for planning and implementing a permanent disposal facility.[257] However, the United States does not have, and never has had, a long-term storage facility for nuclear waste.[258] There is only one operating deep geologic repository in the United States for federally generated nuclear waste, the WIPP in New Mexico. This facility is authorized only for the disposal of defense transuranic radioactive waste and is statutorily prohibited from accepting high-level waste or spent nuclear fuel.[259] In the absence of sufficient permanent disposal capacity, any waste generated by the high volume of microreactors to be licensed under the NRC's proposed regulations would go to interim storage facilities. The NRC fails entirely to assess the potential environmental impacts of increased generation of nuclear waste from facilities reviewed pursuant to this proposed action and categorical exclusion in light of the lack of long-term waste storage. The NRC must assess the impacts of the increased generation of hazardous and radioactive waste.

iii. The NRC ignores potential impacts to uniquely affected communities.

The NRC fails to analyze or direct future projects to look for impacts to communities that could be uniquely affected by expanded development of microreactors including communities near potential future reactor site. By completely omitting any analysis of this issue, the NRC has ignored an important category of potential environmental impacts. The NRC must assess these impacts.

iv. The NRC fails to assess the potential for terrorist attacks on microreactors

The NRC fails to assess the potential for significant environmental impacts from terrorist, or intentional, attacks on rapidly proliferating microreactors. However, NEPA does require the consideration of the environmental impacts of a potential terrorist attack on nuclear installations.[260] This lack of analysis comes nowhere close to an "adequate explanation" necessary to comply with NEPA.[261] The NRC must assess these impacts.

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[257] 42 U.S.C. §§ 10155, 10222.

[258] *See* U.S. Government Accountability Office, *Commercial Spent Nuclear Fuel: Congressional Action Needed to Break Impasse and Develop a Permanent Disposal Solution* (Sept. 2021), https://www.gao.gov/products/gao-21-603.

[259] The Waste Isolation Pilot Plant Land Withdrawal Act, P.L. 102-579 (106 Stat. 4777), enacted October 30, 1992, § 12 ("The Secretary shall not transport high-level radioactive waste or spent nuclear fuel to WIPP or emplace or dispose of such waste or fuel at WIPP.").

[260] *San Luis Obispo Mothers for Peace v. U.S. Nuclear Reg. Comm'n*, 449 F.3d 1016, 1035 (9th Cir. 2006) (reversing NRC's "determination that NEPA does not require a consideration of the environmental impact of terrorist attacks"); *cf. Brodsky v. U.S. Nuclear Reg. Comm'n*, 650 Fed. Appx. 804, 807 (2d Cir. 2016) (Summary Order) (holding that "NRC did consider the risks from terrorism in determining that its exemption decision would have no significant environmental impact").

[261] *See Sierra Club v. Bosworth*, 510 F.3d 1016, 1026 (9th Cir. 2007) (quoting *Jones v. Gordon*, 792 F.2d 821, 828 (9th Cir. 1986)).

v. The EA fails to consider transportation impacts

The EA fails to consider the impacts of increased transportation associated with the rapid deployment of microreactors. The EA includes no discussion of the quantity and frequency of fuel transportation through populated areas and thus has no analysis of the potential impacts from this transportation. The EA similarly fails to analyze the cumulative impacts of repeated transport of necessary fuels. The NRC must assess these impacts.

vi. The EA fails to consider the cumulative impacts from other regulatory changes

The NRC is currently undertaking a "wholesale revision" of its regulations.[262] Additionally, the Department of Energy has undertaken several regulatory changes in the past year as well.[263] The NRC explicitly states that it is building off of the DOE's work, potentially including projects approved via the DOE's advanced nuclear categorical exclusion, through "leveraging of prior U.S. Department of Energy or Department of War authorizations of demonstration reactors into the NRC's licensing reviews of commercial reactor facility applications that reference those designs."[264] The NRC does not assess at all how these various regulatory changes interact with and build upon each other to potentially create significant environmental effects.

B. The proposed Categorical Exclusion is inconsistent with NEPA

The States oppose the proposed categorical exclusion from NEPA review for licenses for "microreactors or other reactors with comparable risk profiles"—which would apply where the project fits within the site envelope parameters of Table C-1 of Appendix C to 10 C.F.R. Part 51, and meets other criteria-—as legally impermissible and inconsistent with NEPA.[265] As established in the six subsections below, this categorical exclusion fails on independent grounds: it applies to untested and experimental technologies that cannot satisfy NEPA's threshold showing that a category of actions "normally does not significantly affect the quality of the human environment," 42 U.S.C. § 4336e(1); it encompasses a range of reactor designs too diverse and site-conditions too variable to allow for categorical treatment; and it eliminates the public participation, alternatives analysis, and State coordination mechanisms that NEPA exists to provide. The NRC must withdraw it.

i. A categorical exclusion is not appropriate for licensing untested and experimental microreactors.

NEPA does not allow the use of a categorical exclusion for this type of action. A categorical exclusion "means a category of actions that a federal agency has determined normally does not significantly affect the quality of the human environment."[266] But categorical exclusions are not

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[262] *See* NRC, *Wholesale Revision of Regulations Under Executive Order 14300*, https://www.nrc.gov/about-nrc/governing-laws/advance-act/wholesale-revision-regs.

[263] *See, e.g.* Notice of New Categorical Exclusion for Advanced Nuclear Reactors, and Request for Comment, 91 Fed. Reg. 4,550 (Feb. 2, 2026).

[264] NRC Reviews of Reactor Designs Previously Authorized by U.S. Department of Energy or Department of War, 91 Fed. Reg. 16584 (April 2, 2026)

[265] *See* proposed 10 C.F.R. § 57.350, 91 Fed. Reg. at 23,749 (establishing the categorical exclusion applicable where a project fits within the site envelope parameters of Table C-1 of Appendix C to 10 C.F.R. Part 51 and meets four additional criteria).

[266] 42 U.S.C. § 4336e(1).

meant to be applied to experimental, untested technologies. Rather, "categorical exclusions by definition, do not have a significant effect on the quality of the human environment."[267] It is arbitrary and capricious for the NRC to assert that microreactors will not have a significant effect on the environment when these proposed technologies remain unbuilt, untested, currently under development, or tested only in a research, not a commercial context. Applying categorical exclusions to experimental nuclear reactors is a far cry from applying it to the kinds of routine, procedural, maintenance, small-scale, or low-risk agency actions for which the categorical exclusion was intended, and for which it is predominantly used.[268]

ii. The potential projects are too diverse to fit in a categorical exclusion.

The projects covered by NRC's categorical exclusion and the potential site-specific impacts from their construction are too varied to fit under a single categorical exclusion. The proposed categorical exclusion covers any "microreactor or other reactor with a comparable risk profile."[269] Microreactors can use any of a number of different technologies ranging from molten salt reactors to Sodium Cooled Reactors.[270] Each of these reactor types carry with them their own risks.[271] Additionally, the NRC does not specify what other types of reactors it would consider as having a comparable risk profile.[272]

To adopt a CE for a variety of potential reactors, the NRC would need to analyze the anticipated environmental effects for each of them. Without a definition of microreactor it is not possible to assess the potential environmental effects of each potential type of microreactor. The NRC does not and cannot demonstrate that any potentially covered types of reactors is the type of action that "normally does not significantly affect the quality of the human environment."[273]

iii. Newness of microreactor technology means that there is little data on actual impacts.

Microreactors often employ technologies in their early stages of development. As a result, it is premature for the NRC to conclude that their construction and operation are the type of action that "normally does not significantly affect the quality of the human environment."[274] At this time, there are no operational microreactors in the United States.[275] This means that the NRC has had almost no opportunity to determine if its analysis of potential environmental impacts is accurate.

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[267] *Sierra Club v. Bosworth*, 510 F.3d 1016, 1025 (9th Cir. 2007) (internal quotation marks and citations omitted).

[268] *See generally* Council on Environmental Quality, *Categorical Exclusions: List of Federal Agency Categorical Exclusions (CE LIST)* (May 2024), available at https://ceq.doe.gov/nepa-practice/categorical-exclusions.html.

[269] 91 Fed. Reg. 23749.

[270] *See* U.S. Energy Information Administration, *Small modular reactors and microreactors under development in the United States*, https://www.eia.gov/todayinenergy/detail.php?id=67584.

[271] *See, e.g.*, International Atomic Energy Agency, *What are Molten Salt Reactors?* https://www.iaea.org/newscenter/news/what-are-molten-salt-reactors; Terrapower.com, *The Plant,* https://www.terrapower.com/natrium/ (last visited March 3, 2026) (explaining public-private investment in "first-of-a-kind" reactor technologies and describing "breakthrough innovation").

[272] *See* 91 Fed. Reg. 23,654-56.

[273] 42 U.S.C. 4336e(1).

[274] 42 U.S.C. § 4336e(1).

[275] *See* Idaho National Laboratories, *Microreactors and how they work*, https://inl.gov/trending-topics/microreactors/

Given the novel nature of this technology, it is premature to promulgate a blanket exemption from environmental review under NEPA.[276]

iv. The categorical exclusion is inconsistent with the envelope parameters in Table C-1.

The NRC's justification for the categorical exclusion conflicts with its own underlying analysis. In order to apply the categorical exclusion, a project must meet the specifications in Table C-1 of Appendix C of 10 C.F.R. Part 51. The NRC states that where "an application for a proposed microreactor meets the values and assumptions of the plant parameter envelope for Category 1 issues" from NUREG-2249 as codified in Table C-1, and the requirements at 10 CFR 57.350(b)(2), then a microreactor would not individually or cumulatively have a significant effect on the human environment.[277] However, application of a categorical exclusion for a microreactor would conflict with the standards in Table C-1 because the Table explicitly calls out the need for site specific analysis, which will not happen if a categorical exclusion is applied.

The categorical exclusion allows for multiple microreactors or other reactors to be covered within a single use of the categorical exclusion so long as the project is within the environmental plant parameter and site parameter envelope in Table C-1 of Appendix C of 10 C.F.R. part 51. However, the parameter envelope assessments in Table C-1 of appendix C of part 51 apply to a single nuclear reactor.[278] The impacts of building and operating *multiple* reactors are not assessed in Table C-1. The potential impacts of multiple reactors can compound when more than one reactor is built. The NRC should analyze the potential for different impacts where a project includes multiple reactors.

Moreover, several of the site-related criteria incorporated into the proposed categorical exclusion are not sufficiently objective or readily verifiable to support categorical treatment. While the NRC appears to assume that eligibility can be determined using generally available environmental, geological, hydrological, meteorological, and land-use information, some of the criteria rely on terms and datasets that may be ambiguous, incomplete, or subject to interpretation. For example, the categorical exclusion applies only to facilities located more than 0.5 miles from a "residential area," yet the proposed rule does not define that term. As a result, applicants, affected communities, and reviewing agencies may reach different conclusions regarding whether a particular site satisfies the criterion. Similarly, the requirement that eligible facilities be located at least one mile from conservation lands may be difficult to apply consistently because state and local open-space inventories are often fragmented, outdated, or incomplete. These ambiguities underscore the need for site-specific review and demonstrate that compliance with the categorical exclusion criteria cannot always be determined solely through application of the generic envelope parameters contained in Table C-1.

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[276] *Cf. Sierra Club v. U.S. Dep't of Transportation*, 125 F.4th 1170, 1183 (D.C. Cir. 2025) (vacating Department of Transportation's rule based on agency's failure to prepare an EIS, since "the record reflects that transporting [liquefied natural gas] by rail poses a low-probability but high-consequence risk of a derailment that could seriously harm the environment").

[277] 91 Fed. Reg. at 23,655.

[278] 10 C.F.R. Part 51 Appendix C ("environmental impacts associated with building, operating, and decommissioning a nuclear reactor").

Furthermore, the NRC recognized that several of the impacts assessed in Table C-1 require additional site-specific analysis: Category 2 impacts.[279] Category 2 impacts include, among others:

- Endangered species
  - "The NRC is unable to determine the significance of potential impacts without consideration of project-specific factors, including the specific species and habitats affected and the types of ecological changes potentially resulting from each specific licensing action"; of
- Cultural and historic resources
  - "Impacts on historic and cultural resources are analyzed on a project-specific basis. The NRC will perform a National Environmental Policy Act (NEPA) analysis and a National Historic Preservation Act (NHPA) Section 106 consultation as required, in accordance with 36 C.F.R. Part 800, including consultation with the State and Tribal Historic Preservation Officers, Indian Tribes, and other interested parties."
- Climate change
  - "The effects of climate change on environmental resources are location-specific and cannot, therefore, be evaluated generically.";
- Cumulative impacts
  - "Applications must individually consider the cumulative impacts from past, present, and reasonably foreseeable actions known to occur at specific sites for proposed new nuclear reactors and briefly present those considerations in supplemental NEPA documentation."
- Site alternatives
  - "Must be described in the environmental report associated with a given application."

The NRC proposes to rely on the requirements in proposed section 57.350(b)(2) to address these Category 2 impacts.[280] However, the requirements of section 57.350(b)(2) do not adequately address these Category 2 considerations. They do not address these considerations directly or indirectly. NRC's guidance in its proposed guidance document "NUREG-2271; Guidelines for Preparing and Reviewing Applications Under 10 CFR Part 57," conflicts with the application of a categorical exclusion based on the parameters in the proposed regulation. With respect to climate change impacts, it states that: "If climate-related changes do not exacerbate the impacts on environmental resources affected by the facility sufficiently to render them significant, then climate change impacts do not have a significant effect on the human environment. Additionally, the licensee is required to maintain the facility in a safe condition for all external hazards that could be exacerbated by climate change."[281] This tautologically assumes away any impact from climate change.

The NRC argues that the Category 2 impacts have been addressed through the Section

[279] Table C-1 ("Environmental issues for which a generic finding regarding the environmental impacts cannot be reached because the issue requires the consideration of project-specific information that can only be evaluated once the proposed site is identified. The impact significance (*i.e.,* SMALL, MODERATE, or LARGE) for these issues will be determined in a project-specific evaluation.").

[280] 91 Fed. Reg. at 23,655.

[281] NUREG-2271; Guidelines for Preparing and Reviewing Applications Under 10 CFR Part 57 at E-12.

57.350(b)(2) standards developed for "environmentally sensitive resources."[282] However, this is not the standard under NEPA. NEPA requires the consideration of all "reasonably foreseeable environmental effects," a much broader category then merely effects on environmentally sensitive resources.[283] The requirements the NRC provides for application of the CE therefore have not considered many of the impacts required to be analyzed under NEPA.

In addition, application of the categorical exclusion without assessing potential impacts to historic and cultural resources could violate the National Historic Preservation Act. Similarly, failure to account for potential take of endangered species could violate the Endangered Species Act.

Consistent with its previous analysis, the NRC should ensure these Category 2 impacts are analyzed on a site-specific basis for the licensing of microreactors and not allow the application of the proposed CE.

v. Application of a categorical exclusion means there will be no alternatives analysis.

NEPA requires federal agencies to consider reasonable alternatives to a proposed action when developing an EIS.[284] However, when an agency applies a categorical exclusion to develop a project they will go through no such process. Because of this, the NRC will not have to look at alternate sites for a proposed microreactor, alternate project sizes, or any other reasonable alternative that changes the impacts to the human environment. The alternatives analysis, as informed by public comment, can identify both impacts of the project on the environment such as nearby sensitive habitats, wetlands and vernal pools. The alternatives analysis can also be used to avoid natural conditions that could impact the project. These impacts could include the location of seismic faults, the contours of a lahar zone, or other unstable geologic features. Application of a categorical exclusion means the NRC will not need to consider how to avoid these potentially significant impacts.

vi. Applying a categorical exclusion obscures environmental review from the public in violation of NEPA's information sharing purposes.

The NRC shifts the bulk of environmental review of microreactors approved via the categorical exclusion from a public EIS or EA process to a purely internal examination of potential environmental impacts. NRC states that it will only apply the categorical exclusion where the proposed project meets the envelope parameters in Table C-1 and the requirements of 10 C.F.R. § 57.350(b)(2). However, that determination would happen internally within the NRC.

NEPA has long been central to informed and transparent agency decision-making and allowed for meaningful public participation in developing and reviewing proposed federal actions.[285] These legal requirements have significant practical benefits to the implementing agency. For example, State and tribal governments and local communities may have information about potential impacts and can share them with the project sponsor and responsible agency.

[282] 91 Fed. Reg. at 23,655.

[283] 42 U.S.C. 4332(C)(i).

[284] 42 U.S.C. § 4332(2)(C)(iii). NRC regulations also require an alternatives analysis in every environmental assessment, *see supra*.

[285] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

Recently, the NRC produced an EIS for a power plant license renewal and noted that it considered public feedback from the public, including "Federal, State, and Tribal governments, and public comments received during the EIS scoping process and draft EIS public comment period."[286]

However, if a project proceeds on a CE there will be no opportunity for public input to bring these potential impacts to light prior to the NRC making a decision. The States will not be provided the statutorily required opportunity to provide comments to NRC as part of an EIS process.[287] Additionally, without the transparency of a public NEPA process, it is harder for the public to identify, and the NRC to rectify, potential errors or omissions in analysis made by NRC. Years of civic regret often follow projects built without such analysis.

The safe and effective rollout of microreactors requires a thorough analysis of potential environmental impacts *before* licensing. The NRC's environmental assessment of the Proposed Rule fails to conduct this needed analysis in violation of NEPA. The NRC must provide this environmental analysis prior to finalizing this rule. Additionally, the NRC should withdraw the proposed categorical exclusion.

C. The Proposed Part 57 Framework Provides Insufficient NEPA Notice to States, Tribes, and the Public in Future Licensing Proceedings.

Public involvement by States, local governments, tribes, and residents is critical to identifying and evaluating public health and environmental issues of local or statewide concern that arise from specific proposed federal actions. NEPA prioritizes this role by requiring federal agencies to take a "hard look" at environmental consequences and provide meaningful opportunity for public participation before committing to a course of action.[288]

The framework Part 57 would establish fails to provide that meaningful opportunity in future microreactor licensing proceedings. By authorizing categorical exclusions from NEPA review for reactors meeting the Part 57 entry criteria,[289] the proposed rule eliminates the project level EIS or EA process—and with it the statutory notice, comment, and State coordination mechanisms through which States, tribes, and local communities would otherwise have the opportunity to identify site-specific environmental impacts and provide information the NRC may not have known -existed.[290]

This structural NEPA notice deficiency is compounded by the proposed rule's interaction with the DOE's categorical exclusion for advanced nuclear reactors,[291] which may be leveraged

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[286] *See* NRC*, Environmental Impact Statement for the License Renewal of the Columbia Fuel Fabrication Facility in Richland County, South Carolina,* EIS pp xiiii, xiv, (July 2022), https://www.nrc.gov/docs/ML2220/ML22201A131.pdf.

[287] 42 U.S.C.§ 4332(C).

[288] *Env't Def. Ctr. v. Bureau of Ocean Energy Mgmt.*, 36 F.4th 850, 872 (9th Cir. 2022).

[289] S*ee* proposed 10 C.F.R. § 57.350, 91 Fed. Reg. at 23,749.

[290] *See* 42 U.S.C. § 4332(C) (requiring agencies to afford State and local governments comment rights in the EIS process).

[291] DOE, *Categorical Exclusion for Advanced Nuclear Reactors*, 91 Fed. Reg. 4,550 (Feb. 2, 2026). *See also* comment letter filed by a coalition of states, including some signatories to this letter, on the DOE's *Notice of New Categorical Exclusion for Advanced Nuclear Reactors, and Request for Comment*, 91 Fed. Reg. 4,550 (Feb. 2, 2026), Docket ID No. DOE-HQ-2025-0405, attached here as an exhibit.

into NRC Part 57 proceedings through the DOE/DOD Previous Authorization Rule.[292] If a microreactor design has already been authorized by DOE under a categorical exclusion established without public comment, and that authorization is then used to streamline NRC Part 57 licensing, a reactor could be sited, constructed, and licensed to operate without any public NEPA process at either the DOE or NRC stage. The cumulative effect of these two categorical exclusions operating in sequence is the complete elimination of public environmental review for an entire generation of commercial nuclear reactors—an outcome that cannot be reconciled with NEPA's "action-forcing" mandate.[293]

The NRC must ensure that future Part 57 licensing proceedings provide States, tribes, and local governments with meaningful notice and an opportunity to participate in environmental review before a categorical exclusion is applied to any specific reactor siting and deployment action.

V. The Proposed Rule Fails to Analyze Costs, Risks, and Economic Burdens to the States, Tribes, and Local Governments.

The NRC's Regulatory Analysis Guidelines provide that the NRC must undertake a "transparent" cost-benefit analysis.[294] The Guidelines note that "significant differences may exist between the recipients of benefits and those who incur costs. The distribution of costs and benefits for various groups should be presented and discussed."[295]

The cost and benefits analysis in the draft Regulatory Analysis is insufficient. It states that "[t]he NRC believes that future licensees of microreactors and other reactors with comparable risk profiles would be the primary beneficiaries" of the Proposed Rule.[296] But the draft Regulatory Analysis does not explain who will incur the costs, or what kinds of costs will be incurred by States, tribes, and other local governments.

The draft Regulatory Analysis includes only a conclusory assertion that public entities such as state governments will not be affected: "Attributes that are not expected to be affected under either of the alternatives include public health (routine), occupational health (accident), occupational health (routine), offsite property, onsite property, industry implementation, NRC implementation (sunk cost), other government entities, general public, safeguards and security considerations, and environmental considerations."[297]

This conclusory analysis is insufficient. It is facially implausible that "attributes" such as government entities, public health, and the environment will be unaffected by the deployment of thousands of untested microreactors. The NRC is legally obligated to explain the reasons

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[292] NRC, *NRC Reviews of Reactor Designs Previously Authorized by U.S. Department of Energy or Department of War*, 91 Fed. Reg. 16,584 (Apr. 2, 2026).

[293] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

[294] NRC, *Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission* (Sep. 2004) NUREG/BR-0058, (Rev. 4), Adams Accession No. ML042820192. The Commission withdrew the latest proposed revision, Rev. 5 (ML17221A005). *See* Staff Requirements Memorandum (May 3, 2024), Adams Accession No. ML24124A088.

[295] *Id.*

[296] NRC, *Draft Regulatory Analysis for the Proposed Rule: Licensing Requirements for Microreactors and Other Reactors with Comparable Risk Profiles* at 2 § 2.1 (Sep. 2025) (NRC-2025-0379-0013).

[297] *Id.* § 2.1.

underpinning its conclusion that these "attributes" will be unaffected by a potentially mass deployment of microreactors in the United States.[298]

The NRC does not include an analysis under the Unfunded Mandates Reform Act, 2 U.S.C. § 1501, *et seq*, even though the Proposed Rule will impose significant financial burdens on States and local governments. If the NRC's prediction of the deployment of 2,235 microreactors across the country is correct, that deployment will create significant costs in terms of emergency response training and preparedness, and emergence response costs by the States and other local governments. The NRC fails to examine, or glosses over in conclusory fashion, several areas of concern to the States: (i) liability in the event of an accident under the Price-Anderson Act; (ii) the sufficiency of decommissioning funds; (iii) emergency planning for public health and environmental cleanup; (iv) costs and risks of radiological exposure due to transportation of microreactors and fuel; and (v) safety and security concerns.

A. Liability and Price-Anderson Act Concerns

The Price-Anderson Act requires that, "for facilities designed for producing substantial amounts of electricity and having a rated capacity of 100,000 electrical kilowatts or more, the amount of primary financial protection required shall be the maximum amount available at reasonable cost and on reasonable terms from private sources (excluding the amount of private liability insurance available under the industry retrospective rating plan required in this subsection)."[299]

The NRC proposes to reduce the amount of financial protection required for microreactors: "The NRC would exercise its regulatory discretion to establish a reduced amount of financial protection for facilities licensed under part 57, based on [Price-Anderson Act] factors."[300] The Proposed Rule states that, for microreactors, "[p]ower outputs range from only a few kilowatts to several tens of megawatts, and designs may operate in either a fast or thermal neutron spectrum."[301] So, the Price-Anderson Act does give the NRC discretion to reduce the amount of financial assurance for reactors below the 100,000 kilowatt (100 MW) statutory threshold.

The recent NRC rulemaking—*Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors*—created a tiered system codified at 10 C.F.R. § 140.11. Under that system, a licensee is required to maintain: $1,000,000 for each nuclear reactor that generates up to 10 kilowatts of thermal power; $1,500,000 for each nuclear reactor > 10kw and up to 1 MW; and $2,500,000 for each nuclear reactor >1MW and up to 10 MW.[302]

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[298] *See* Schofer Comment n.42 ("Cost and benefit estimates should be expressed in monetary terms whenever possible"; "even inexact quantification with large uncertainties is preferable to no quantification, provided the uncertainties are appropriately considered"; "[a]n attribute should not be omitted from a regulatory analysis document simply because it is determined to be unquantifiable" (citing NRC, *Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission* (Sept. 2004) NUREG/BR-0058, Revision 4, ADAMS Accession No. ML042820192, at 23-24)).

[299] 42 U.S.C. § 2210(b)(1) (requiring primary financial protection for "facilities designed for producing substantial amounts of electricity and having a rated capacity of 100,000 electrical kilowatts or more"); *see also* NRC, "Financial Protection Requirements and Indemnity Agreements," 10 C.F.R. § 140.11 (setting tiered financial protection amounts for reactors below the 100 MW statutory threshold, confirming the 100 MW equivalency).

[300] 91 Fed. Reg. at 23,679.

[301] 91 Fed. Reg. at 23,631.

[302] 10 C.F.R. § 140.11(a).

Licensees are also required to maintain secondary financial protection, with deferred premium charges. But licensees with more than one reactor can use the same amount of secondary insurance as licensees with only one. In other words, licensees can save on financial assurance by having more than one reactor at a site.

Having exercised its discretion to create a tiered financial assurance scheme for microreactors, the NRC must still also account for the "nature" of the proposed activity under the Price-Anderson Act, which in the case of microreactors, are a variety of untested, experimental technologies which could be rapidly licensed and deployed to thousands of sites across the United States simultaneously. Just determining financial assurance based on thermal electricity output is not a sufficient indicator of liability risk: NRC must also take into account the experimental, untested nature of microreactors, the fact that Part 57 proposes to license these facilities *en masse* and with the potential for numerous identical reactors co-located which, cumulatively, may pose increased liability risk, and the reduction in safety and security features such as no EPZ, no on-site inspectors, remote operation, for example. The States' comments on the Proposed Rule's reduction in defense-in-depth layers and deterministic safety features are incorporated here. *See* Section § II.

Because the NRC is issuing manufacturing licenses for rapid deployment, any design defects could proliferate quickly and widely under this model: the financial assurance required of a manufacturer must reflect the level of liability exposure based on the experimental, untested nature of the reactor, and the deployment plans for that particular design.

Further, the Proposed Rule does not explain how liability would be apportioned between the manufacturer, construction permit holder, and operating licensee under the new Part 57 scheme.[303] The NRC must clarify which licensees will be liable in the event of harm to the public or to the environment, and fully explain how the Price-Anderson factors apply to each of the various types of license holders.

B. Decommissioning Funds

The NRC is soliciting comment on whether industry should be able to access decommissioning funds to refurbish or replace reactors.[304] The States request that decommissioning funds be ringfenced for the purpose for which they were intended: to safely decommission nuclear reactors. If licensees can tap into decommissioning funds to refurbish or replace reactors to continue to operate their business, then it is less likely that the decommissioning funds will be there in sufficient quantities to fulfil their intended purpose when the time comes to decommission the reactors. If irresponsible license holders do not ensure sufficient decommissioning funds are available, the States will inevitably bear the brunt of the potentially crippling costs to cleanup and remediate the sites. The NRC must fulfil its statutory mandate to make sure that the decommissioning of microreactors is fully provided for.

C. Emergency Planning For Public Health and Environmental Cleanup

[303] *See also* Schofer Comment § 18(d) n.122 ("Part 57's split-responsibility model—with manufacturing under the CP holder and operation under the OL holder—creates ambiguity as to which entity is the "person indemnified" for liability arising from manufacturing-induced defects discovered post-operation, and whether the manufacturer's indemnification status is sufficient to ensure full Price-Anderson recovery for affected third parties.").

[304] Qu. 5-2, 91 Fed. Reg. at 23,680-81.

The draft Regulatory Analysis excludes public health, environmental considerations, and other government entities from its cost-benefit analysis on the ground that these "attributes" are "not expected to be affected" by the proposed rule. That exclusion is methodologically circular and independently defective under OMB Circular A-4.

The circularity is clear: the NRC's conclusion that public health costs are zero depends entirely on the validity of the 1 rem TEDE entry criterion. As established in Section II(A), that criterion is itself unjustified—it is ten times the NRC's own standing public dose limit under 10 C.F.R. § 20.1301, and is the threshold at which EPA recommends that evacuation or sheltering-in-place *begin*, not a ceiling defining what is safe.[305] An agency cannot predicate a zero-cost public health finding on an entry criterion it has not justified.[306]

The methodological defect is compounded by the draft Regulatory Analysis's treatment of emergency planning cost reductions as averted costs—that is, as savings credited to the proposed rule's benefits—rather than as cost transfers to state and local governments. By eliminating the EPZ and associated emergency planning requirements for Part 57 facilities, the NRC has not eliminated emergency response costs; it has shifted them. If a radiological release occurs at a Part 57 facility, the costs of evacuation, sheltering, decontamination, and long-term public health response will be borne by state and local emergency management agencies, not by the licensee. Counting the elimination of licensee emergency planning obligations as a cost saving to the regulatory analysis, while simultaneously declining to quantify the corresponding cost imposed on government entities, produces a systematically biased benefit-cost ratio that does not reflect actual social costs. OMB Circular A-4 § III requires that public health effects be "quantified to the extent feasible" and that "[w]here quantification is not feasible, a detailed qualitative description is required." The Regulatory Analysis provides neither.[307]

This cost-transfer problem is most acute for licensees that select the MCA accident analysis methodology, which the proposed rule acknowledges could justify a smaller site boundary and fewer safety-classified SSCs than the MHA would require for the same reactor design.[308] A smaller licensed site boundary means that a credible accident scenario producing radiological consequences beyond the boundary—consequences the MCA methodology excludes as "physically unrealistic" but does not eliminate—will fall outside the footprint the licensee planned and funded emergency response for, leaving state and local authorities as the residual responders with no advance coordination, funding commitment, or training requirement from the licensee.

The States therefore request that the NRC: (1) correct the draft Regulatory Analysis to quantify emergency response costs as costs imposed on state, local, and tribal governments rather than as averted costs credited to the Proposed Rule, consistent with OMB Circular A-4 § III and NRC Regulatory Analysis Guidelines; (2) specify in the final rule the minimum emergency planning content required of Part 57 licensees—including community notification protocols,

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[305] *See* EPA PAG Manual at 1, 6 (Jan. 2017).

[306] *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

[307] *See* Schofer Comment §§ 5(f), 17, NRC-2025-0379-0021; *see also* NRC, *Regulatory Analysis Guidelines*, NUREG/BR-0058, Rev. 4, at 23–24 (Sept. 2004) (ADAMS Accession No. ML042820192) ("[A]n attribute should not be omitted from a regulatory analysis document simply because it is determined to be unquantifiable").

[308] *See* 91 Fed. Reg. 23,628, 23,639 (May 1, 2026).

evacuation planning where the site boundary adjoins populated areas, and pre-licensing coordination with state and local emergency management authorities—rather than leaving these elements to case-by-case determination[309]; and (3) quantify and address the three additional unquantified cost categories the draft Regulatory Analysis omits entirely: (a) costs to Agreement State waste processors and programs arising from the Proposed Rule's failure to resolve the AEA jurisdictional status of Part 57 operational waste streams; (b) costs to Agreement States and local emergency managers from the absence of a Part 70 jurisdiction determination for HALEU fuel in pre-installation storage and transit; and (c) future costs of extending the Part 57 reduced-protection framework to larger reactor types through undefined case-by-case "comparable risk profile" determinations that bypass notice-and-comment rulemaking.

D. Costs and Risks of Transporting Transportable Reactors and Fuel

The Proposed Rule lacks the technical provisions to ensure that the transport of nuclear fuel to deployment sites is safe and secure. The Proposed Rule assumes that transporting factory-built, fleet-deployed microreactors and their associated fuel streams will be routine, low-consequence activities, but it does not provide the technical, security, or coordination framework needed to support this dubious conclusion. High-volume deployment under the Regulatory Analysis's own assumptions would generate thousands of shipments of fresh fuel, fueled cores, irradiated cores, and ultimately spent fuel across multiple transportation corridors, including metropolitan areas. Yet the rule does not quantify shipment frequency, identify likely routes, or conduct the cumulative-risk analysis required under NEPA. It also relies on a nonconservative Table 1 source term that may underpredict inventories for high burnup, HALEU, TRISO, metallic, or fast spectrum designs—meaning that transport packages certified against those assumptions may not bound accident consequences. Security and sabotage risks during transit are similarly underassessed, and the rule's "low consequence" framing risks inappropriate relaxation of existing Part 73 transport security requirements.[310]

The proposal also fails to address emergency response and mutual aid-needs along transportation corridors, despite the novel hazards posed by advanced fuels and reactor concepts, and it does not require coordination with state departments of transportation, local emergency management agencies, or tribal authorities. This omission shifts risk to localities, including under-resourced communities, and raises Price-Anderson implications. Finally, the rule leaves open the possibility of transporting active cores or fuel before the NRC has accepted a transport safety case. To remedy these deficiencies, the Commission should require a fuel form and burnup-specific transport safety case; quantify and limit shipment frequency; preserve or strengthen existing Part 73 transport security standards; mandate pre-shipment coordination and responder training commitments; and prohibit any pre-license transport of fuel or active cores until the NRC has formally accepted the transport safety case.[311]

Furthermore, Part 71 provides the NRC's foundational packaging, testing, operating control, and quality assurance requirements for transporting radioactive material, including the hypothetical accident condition tests in §§ 71.71–71.74 and the Subpart G and H controls that govern loading, unloading, transit security, and quality assurance program approval. These

[309] *See* Schofer Comment § 17, NRC-2025-0379-0021; 2 U.S.C. § 1532(a)(2) (UMRA requirement to assess costs to state, local, and tribal governments).

[310] *Id.* § 7.

[311] *Id.*

standards—harmonized with DOT regulations and International Atomic Energy Agency regulations[312]—are the basis for bounding offsite consequences during transport. If a transportable microreactor or its fuel shipping package cannot meet these requirements, the Proposed Rule's assumption of "low consequence" shipments is unsupported. The Commission cannot rely on vendor asserted equivalence or unverified test data to justify reduced emergency preparedness or security measures.

Packages that are not qualified to Part 71 accident condition standards may fail in ways that release volatile fission products or respirable particulates, especially for novel fuels such as high burnup TRISO, metallic, or molten salt—compositions whose thermal and mechanical behavior differs from legacy LWR uranium dioxide. Omitting Subpart H quality assurance requirements risks fleetwide manufacturing defects, and removing Subpart G operating controls increases human error contributions during transport. For these reasons, any shipment of irradiated fuel, fissile material, or quantities above Type A limits to or from a Part 57 facility should be required to comply with Part 71—or an NRC-approved equivalence demonstration—and undergo consequence reanalysis whenever fuel form, burnup, or package design deviates from the certified basis. Part 71 compliance should be a non-waivable prerequisite for any operational flexibilities premised on low-consequence shipment assumptions.[313]

The Proposed Rule also fails to address which agency has regulatory jurisdiction over HALEU fuel during transit and pre-installation storage at the deployment site. HALEU above Part 70 threshold quantities is special nuclear material (SNM) subject to exclusive NRC jurisdiction under AEA Section 274(c)(1) and 10 C.F.R. § 150.15(a)(1), precluding Agreement State authority[314]—yet the proposed rule does not specify whether the manufacturing facility or deployment site requires an independent Part 70 license, whether pre-startup HALEU quantities trigger the § 150.15 threshold placing the entire site outside Agreement State oversight, or which agency state and local emergency managers should contact for a pre-installation HALEU incident.

The NRC must resolve, before finalizing Part 57, the Part 70 licensing status and jurisdictional allocation between the NRC and Agreement States for each stage of the HALEU fuel chain from fabrication through reactor startup.

E. Safeguards, Cyber Security, and Physical Security Concerns

Further, the Proposed Rule does not adequately contend with the significant security and cybersecurity challenges inherent in licensing and deploying thousands of microreactors across the country. Microreactors present unique security and cybersecurity threats: they often use more highly enriched fuel than that of conventional reactors, generating greater risks of theft,

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[312] IAEA, *Regulations for the Safe Transport of Radioactive Material*, SSR-6 (2025) (Rev. 2), https://www-pub.iaea.org/MTCD/Publications/PDF/p15912-PUB2120_web.pdf

[313] *See* Schofer Comment § 10.

[314] *See* 10 C.F.R. § 70.20 (specific license required above threshold quantities); 42 U.S.C. § 2014(aa) (defining "special nuclear material" as "uranium enriched in the isotope 233 or in the isotope 235"); 10 C.F.R. § 74.41 (stating that a "significant quantity" of SNM under NRC jurisdiction is "more than one formula kilogram of strategic SNM" or "10,000 grams or more of uranium-235 contained in uranium enriched up to 20.00 percent"); 10 C.F.R. § 150.15(a) (providing that "[p]ersons in agreement States are not exempt from the Commission's licensing and regulatory requirements with respect to . . . [t]he construction and operation of any production or utilization facility," including "the storage and handling of radioactive wastes at the facility" and "the discharge of radioactive effluents from the facility site").

proliferation, and weaponization,[315] and they present additional security vulnerabilities in transportation.[316] The States are concerned about these security risks, particularly because security events may occur within the States' borders, impact residents, and necessitate the involvement of state and local law enforcement and emergency responders. Given these consequential security threats and the limited operational and regulatory experience with microreactor technologies, the States urge further analysis and evaluation in this area.

Specifically, the NRC should ensure facility security by requiring site-specific physical security plans,[317] maintaining strong certified fuel handler requirements,[318] and establishing "explicit requirements for post-event fitness-for-duty evaluations and testing," including after security events or security system failures.[319] The transportation of highly enriched fuel and irradiated cores can also be a target for sabotage or theft.[320] As discussed in Section V(D), *supra*, the framing of shipments as "low" consequence or risk may lead to inappropriately reduced security measures.[321] The NRC should "preserve or exceed existing 10 C.F.R. part. 73 transport-security standards for [special nuclear material]-in-transit and require threat-informed routing."[322]

Further, the NRC solicited comments on alternate transportation dose rates and cost-benefit considerations.[323] Higher dose rates may create more safety risks during transportation disruptions—such as security events—in which there are longer periods of proximity to a shipment.[324] The NRC has also not adequately considered whether higher dose rates may result in increased training, preparation, coordination, and oversight costs for state and local law enforcement, emergency services, and state agencies involved in oversight and review, including in order to mitigate security risks.[325]

Additionally, the NRC solicited comment on whether remote and autonomous operations should be allowed for operations of nuclear power plants demonstrating low consequence.[326] Remote and autonomous reactor operations implicate different, heightened security considerations given the reliance on digital communications and more passive or reduced staffing.[327] The NRC should establish clear limits and requirements on these types of operations, including site-specific security staffing,[328] license condition and design-specific safety analysis,[329] and robust

[315] Schofer Comment § 1; *Science and Tech Spotlight: Nuclear Microreactors*, U.S. Gov. Accountability Off. (Feb. 26, 2020), https://www.gao.gov/products/gao-20-380sp; Congressional Research Service, Advanced Nuclear Reactors: Technology Overview and Current Issues (Feb. 17, 2023), https://apps.dtic.mil/sti/trecms/pdf/AD1193834.pdf (noting the security risks of "HALEU, with a fissile isotope enrichment of between 5% and 20%. At these higher enrichments, even very small reactors would likely contain more than enough fissile material to produce multiple nuclear weapons with further enrichment.").

[316] Schofer Comment § 1.

[317] *Id.* § 19.

[318] *Id.* § 21.

[319] DEEP Comment at xxvi.

[320] Schofer Comment at § 7(c).

[321] *Id.* § 7

[322] *Id.*

[323] 91 Fed. Reg. at 23,681.

[324] DEEP Comment at xx.

[325] *Id.* at xx–xxi.

[326] 91 Fed. Reg. at 23,682; *see also* Section II(D)(iii).

[327] *Id.* at xxxvi.

[328] Schofer Comment § 20(d)

[329] *Id.* at § 16(Q10).

cybersecurity protections.[330] The NRC also should inspect remote/autonomous reactor sites with reasonable frequency, rather than proposing to inspect only in a "targeted" fashion.[331] The States incorporate the numerous cybersecurity and security considerations and protections in the remote, autonomous, and artificial intelligence contexts contained in DEEP's response to Question 10-1.[332] The States also reiterate the importance of defense-in-depth measures. *See* Section II(D).

VI. Mass Deployment of Microreactors Will Exacerbate Nuclear Waste Storage Problems.

As the NRC is no doubt aware, there is no long-term solution to the issue of where to store the nation's spent nuclear fuel.

The Proposed Rule does not address the cumulative impact of 2,235+ microreactors adding to the stockpile of spent nuclear fuel. With no permanent geologic storage solution in sight, and no off-site interim storage facility yet built in the United States, it is arbitrary and capricious for the NRC to encourage the fast-track licensing and rapid deployment of microreactors with no viable pathway for the spent fuel to be safely stored.

No NRC-approved storage system is currently qualified for TRISO spent fuel. Existing dry storage systems are qualified under 10 C.F.R. Part 72 for zircaloy-clad, low-enriched UO_2 LWR fuel at burnups not to exceed the parameters in NRC's Interim Staff Guidance.[333] Savannah River National Laboratory research to develop TRISO SNF storage technology is ongoing with completion targeted for 2027. Until the NRC has approved at least one Part 72 storage system qualified for the specific fuel form, burnup range, and enrichment level of Part 57 reactors, issuing operating licenses for those reactors would create a regime in which facilities are licensed to generate spent fuel that cannot legally be stored. The NRC must either condition Part 57 operating licenses on the existence of an approved, fuel-form-specific storage system, or explain in the final rule how spent fuel from Part 57 reactors will be safely managed in the absence of such a system.

VII. The NRC Fails to Perform Any Cumulative Effects of Regulation Analysis.

In the Proposed Rule, the NRC makes cursory mention of other, related rulemakings, and fails to provide any quantified workload analysis, evaluation of administrative costs, or timeline reconciliation across competing conformance deadlines.

As mentioned above, the NRC fails to include an analysis of the cumulative effects of the Proposed Part 57 regulation, as well as the cumulative effects of the host of other nuclear regulatory changes that are recent, pending, or anticipated.

A. No Analysis on Interaction with *Risk-Informed Technology-Inclusive Regulatory Framework for Advanced Nuclear Reactors*.

[330] DEEP Comment at xxxiv–xxxviii.

[331] 91 Fed. Reg. at 23,633.

[332] *Id.*

[333] *See* NRC, *Interim Staff Guidance: Cladding Considerations for the Transportation and Storage of Spent Fuel* SFST-ISG-11, Rev. 3, ADAMS Accession No. ML033230335; *see also* NRC, *Disposal Options and Potential Challenges to Waste Disposition from Advanced Reactor Fuel Types*, CNWRA Report (2020) Adams Accession No.ML20237F397.

As explained above, the Proposed Part 57 interfaces in significant ways with the *Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors*,[334] for example, when it comes to determining financial assurance.

The NRC needs to comprehensively analyze the cumulative effect of, and relationships between, Proposed Part 57 and the Risk-Informed Rule before finalizing Part 57.

B. No Analysis on Interaction with Pending Byproduct Rule

The Proposed Rule does not examine or provide guidance on how Part 57 licenses for microreactor sites will interface with byproduct materials licenses regulated by Agreement States. Section 274 of the AEA expressly prohibits Agreement States from assuming regulatory authority over the "construction and operation of any production or utilization facility." 42 U.S.C. § 2021(c)(1). Part 57 reactors are "utilization facilities" subject to exclusive NRC jurisdiction.

But microreactors are likely to be deployed at universities, medical campuses, data centers, military installations, and industrial parks—locations that often involve, or will likely involve, Agreement State materials licenses. The Proposed Rule does not analyze the regulatory interface between NRC's authority over Part 57 facilities and Agreement State authority over material users with regard to: emergency planning coordination; radiation monitoring responsibilities; shared access control infrastructure; waste stream management for co-generated byproduct material; and inspection authority boundaries.

The Proposed Rule does not clearly characterize whether operational waste streams generated by Part 57 reactors constitute "byproduct material" subject to Agreement State jurisdiction or "special nuclear material" or "source material" subject to exclusive NRC jurisdiction, and the Proposed Rule does not attempt to resolve that characterization. The Proposed Rule does not analyze the cumulative effects of Part 57 and the proposed rule, *Modernizing NRC Regulations for Byproduct Material Use*.[335]

Before finalizing Part 57, the NRC must publish a determination specifying the jurisdictional status of each Part 57 operational waste stream category and which agency—NRC or Agreement State—is responsible for its oversight. It must also analyze the cumulative effects of, and relationships between, proposed Part 57 and the proposed *Byproduct Material Use* rule.

C. No Analysis on Interaction with DOE/DOD Previous Authorization Rule.

The Proposed Rule does not examine the cumulative impact or regulatory interface of the Proposed Part 57 and pending proposed rule, *NRC Reviews of Reactor Designs Previously Authorized by U.S. Department of Energy or Department of War*.[336] The Proposed Rule must explain how regulatory efficiencies already obtained from DOE/DOD Adoption Rule will relate to proposed Part 57. It must also explain whether categorical exclusions adopted by DOE or DOD will be adoptable under Part 57, and, if they are, explain how the public notice requirements applicable when adopting another agency's categorical exclusion are satisfied.

The NRC must also analyze how DOE and DOD license procedures and standards—that license reactors for a different purpose, such as short-term functionality for research and

[334] 91 Fed. Reg. 15,793 (Mar. 30, 2026).
[335] NRC, *Modernizing NRC Regulations for Byproduct Material Use*, 91 Fed. Reg. 28,916 (May 18, 2026).
[336] 91 Fed. Reg. 16,584 (Apr. 2, 2026)

development—are sufficient to meet the safety-based standards for commercial fleet deployment that NRC must statutorily ensure. The NRC must explain how microreactors that have been licensed through DOE and DOD proceedings meet the NRC's public-review standards and are safe enough to operate for longer periods of time and in locations away from specialized staff or qualified inspectors.

D. No Analysis on Interaction with NRC Sunset Rule

The NRC Sunset Rule inserts a conditional sunset date into certain NRC regulations implementing the Atomic Energy Act of 1954, the Energy Reorganization Act of 1974, and the Nuclear Waste Policy Act of 1982.[337] The conditional sunset date is one year after the Sunset Rule's effective date—January 8, 2027—meaning that covered regulations will expire unless the NRC acts to reissue them. The Proposed Rule does not analyze whether or how the sunset of specific regulations that Part 57 cross-references or incorporations by reference will affect Part 57 licensing proceedings initiated before or after that date. Agreement State compatibility obligations depend on a stable set of NRC regulations; if foundational provisions sunset and are not timely reissued, Agreement States face uncertainty about whether their own compatible regulations remain operative or require conforming amendment. The NRC must explain, in the final Part 57 rule, which, if any, of the regulations cross-referenced in proposed Part 57 are subject to the Sunset Rule's conditional expiration, and how it intends to ensure that Part 57 licensing proceedings are not disrupted by the January 2027 sunset date.

E. No Analysis on Interaction with DOE Zero Based Regulating Rule.

The NRC fails to provide a CER analysis on the cumulative impact of, and interface with, the DOE's Zero-Based Regulating direct final rule, which will automatically sunset DOE regulations that were promulgated under the AEA. The DOE Zero-Based Regulating direct final rule inserts conditional sunset dates into DOE regulations pursuant to E.O. 14270.[338] Because the proposed DOE/DOW Previous Authorization Rule[339] would allow Part 57 applicants to leverage prior DOE authorizations to streamline NRC licensing, the validity and durability of those DOE authorizations is directly material to Part 57 licensing. If the DOE regulations under which prior authorizations were issued are subject to the DOE Zero-Based Regulating Rule's conditional sunset, the legal foundation of leveraged DOE approvals could be undermined before a Part 57 license is issued. The NRC and DOE must jointly analyze and disclose whether prior DOE authorizations referenced in Part 57 applications are subject to the Zero-Based Regulating Rule's sunset provisions, and what legal effect a conditional expiration of DOE regulations would have on NRC licensing proceedings that have already incorporated those authorizations.

F. No Analysis on Interaction with NRC NEPA regulatory changes.

The Part 57 proposed rule's categorical exclusion framework in proposed subpart K is built on the plant and site parameter envelope values in Table C-1 of Appendix C to 10 C.F.R. Part 51. That infrastructure is itself under wholesale revision, with a currently targeted publication date of

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[337] *See* NRC, *The Sunset Rule*, 90 Fed. Reg. 55,621 (Dec. 3, 2025) (direct final rule, effective Jan. 8, 2026) (NRC Docket No. NRC-2025-0479), as corrected by 91 Fed. Reg. 7,393 (Feb. 3, 2026); *see also The Sunset Rule — Aircraft Impact Assessment*, 91 Fed. Reg. 17,757 (Apr. 8, 2026) (addressing the 10 C.F.R. § 50.150 AIA provision).

[338] *See* DOE, *Zero-Based Regulating*, 91 Fed. Reg. 31,869 (May 29, 2026) (direct final rule, effective July 13, 2026, unless significant adverse comments received by June 29, 2026) (DOE Docket No. DOE-HQ-2025-0603).

[339] 91 Fed. Reg. 16,584 (Apr. 2, 2026),

June 15, 2026.[340] The NRC has not analyzed what happens to Part 57's subpart K categorical exclusion if the Part 51 revision substantially alters or eliminates the Table C-1 parameter envelope upon which the CE is predicated. The NRC must either (a) delay finalizing Part 57's NEPA provisions until the Part 51 revision is complete, (b) include a savings provision tying the Part 57 CE to Table C-1 as it exists at the time of application, or (c) commit to a concurrent Part 57 amendment proceeding as part of the Part 51 revision.

G. No Analysis on Interaction with DOE CatEx on Advanced Nuclear Reactors.

Microreactors and small modular reactors are, by definition, a subset of "advanced nuclear reactors."[341] The DOE Categorical Exclusion for Advanced Nuclear Reactors[342] establishes a NEPA categorical exclusion at Appendix B, Section B5.26 of DOE's NEPA implementing procedures for the "authorization, siting, construction, operation, reauthorization, and decommissioning of advanced nuclear reactors." This DOE CE is directly relevant to Part 57 because: (a) the DOE/DOW Previous Authorization Rule[343] would allow NRC applicants to leverage prior DOE authorizations, which may themselves have been issued under the DOE CE without any public environmental review; and (b) if a microreactor is first authorized by DOE under the CE and subsequently referenced in a Part 57 application, the NRC may accept DOE's prior authorization as probative evidence of safety without conducting independent NEPA review even though the DOE CE involved no public participation.

Section 182(a) of the Atomic Energy Act, 42 U.S.C. § 2232(a), provides that each application for a license shall contain "such information as the Commission may, by rule or regulation, require to enable it to find that . . . the utilization . . . of special nuclear material will provide adequate protection to the health and safety of the public." The statutory requirement is self-executing and non-delegable: the Commission itself must make the adequate-protection finding. Congress assigned that judgment to the NRC—not to DOE, not to DOW, and not to any prior authorization proceeding conducted by either department.

The D.C. Circuit confirmed the primacy of this obligation in *Union of Concerned Scientists v. NRC*, 824 F.2d 108, 109, 118 (D.C. Cir. 1987), holding that Section 182(a) "provides the primary statutory standard relating to the Commission's mandate to ensure the safe operation of nuclear power plants" and that the NRC may not "flout" that mandate. Critically, *Union of Concerned Scientists* addressed a situation where the NRC sought to balance safety against economic and scheduling considerations: the court held that the statute forecloses that trade-off when the NRC is "fulfilling its statutory mandate to ensure adequate protection of the public health and safety."[344]

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[340] *See* NRC Staff Requirements Memorandum, SECY-24-0046, *Staff Recommendations for Modernization of NRC Environmental Reviews* (July 28, 2025), ADAMS Accession No. ML25214A108 (directing initiation of a consolidated Part 51 rulemaking projected for completion by January 2029); *Licensing Requirements for Microreactors and Other Reactors With Comparable Risk Profiles*, 91 Fed. Reg. 23,628, 23,629 (May 1, 2026) (noting that E.O. 14300 reform effort "will comprehensively reexamine NRC's NEPA implementing regulations in 10 C.F.R. part 51").

[341] *See* 42 U.S.C. § 16271(b)(1)(A)(x) (defining advanced nuclear reactors to include reactors of "modular sizes").

[342] DOE, *Categorical Exclusion for Advanced Nuclear Reactors*, 91 Fed. Reg. 4,550 (Feb. 2, 2026) (DOE Docket No. DOE-HQ-2025-0405).

[343] 91 Fed. Reg. 16,584 (Apr. 2, 2026),

[344] *Union of Concerned Scientists v. NRC*, 824 F.2d 108, 117 (D.C. Cir. 1987).

The principle applies with equal force here: the NRC may not substitute another agency's prior safety determination for its own § 182(a) finding.

The structure of the proposed DOE/DOD Previous Authorization Rule[345] directly implicates this constraint. The proposed rule would allow Part 57 applicants to "directly leverage" prior DOE or DOD authorizations by treating those authorizations as probative evidence of design safety, reducing the scope of NRC's independent review to "risks arising from new commercial applications rather than revisiting safety determinations already addressed by DOE or DOW."[346] The problem is not leveraging—referencing prior technical data to avoid duplicative review is a legitimate efficiency measure. The problem arises if the prior DOE authorization is treated as conclusive of the NRC's Section 182(a) adequate-protection finding, because DOE's authorization standard is not AEA Section 182(a). The DOE licenses reactors under its own statutory framework— primarily the AEA authorities it retained post-Energy Reorganization Act, including authority over government-owned reactors under 42 U.S.C. § 2121, and its own safety orders under 10 C.F.R. Part 830. The DOE's regulatory standard under Part 830 is a "documented safety analysis" demonstrating that the facility can be operated "without undue risk to workers or the public."[347] This is not the same as the NRC's independent Section 182(a) adequate-protection finding for a commercial license, which must be made on the record for the specific commercial deployment and by the NRC itself.[348]

The owner-regulator conflict embedded in the DOE framework further undermines the evidentiary weight of DOE safety findings for NRC purposes. DOE both funds and regulates reactors at its own national laboratories. The NRC, by statute, is an independent regulatory agency; DOE is not. Findings made by an owner-regulator in an internal authorization proceeding—without adjudicatory process, without independent hearing rights, and without the public participation requirements that attach to NRC licensing—cannot satisfy the NRC's independent obligation under Section 182(a) to make its own record-based adequate-protection finding for a commercial license.

The DOE Advanced Nuclear Reactor Categorical Exclusion (DOE CE)[349] compounds this problem. The DOE CE was established without public comment or adjudicatory process, covers the full life cycle of "advanced nuclear reactors" with no technology-specific analysis, and is predicated on the DOE's own determination—not an independent NRC finding—that such reactors "normally" do not significantly affect the human environment. If a microreactor design is authorized by the DOE under the DOE CE, and that authorization is then leveraged under the Previous Authorization Rule into an NRC Part 57 license application, the NRC must not accept the absence of DOE environmental review as satisfying its own NEPA obligations or its Section 182(a) independent judgment requirement. The NRC's statutory obligation under both NEPA and AEA Section 182(a) runs directly from Congress to the Commission—it cannot be discharged by reference to another agency's determination that environmental review was unnecessary.

The NRC should therefore clarify in the final Part 57 rule, and in the final Previous Authorization Rule, that: (1) prior DOE or DOD authorizations may be referenced as technical

[345] 91 Fed. Reg. 16,584 (Apr. 2, 2026).
[346] *See* 91 Fed. Reg. 16,584, 16,585 (Apr. 2, 2026).
[347] 10 C.F.R. § 830.202(a) (DOE safety analysis standard).
[348] *See* 42 U.S.C. § 2232(a); 10 C.F.R. § 50.40 (NRC findings required before issuance of any license).
[349] 91 Fed. Reg. 4,549 (Feb. 2, 2026) (DOE Docket No. DOE-HQ-2025-0405).

data in Part 57 applications but may not be treated as satisfying NRC's Section 182(a) adequate protection finding; (2) the NRC will conduct its own independent safety review for each commercial Part 57 license, including for designs that have been authorized or operated under DOE or DOD programs; and (3) DOE's categorical exclusion for advanced nuclear reactors does not satisfy or substitute for the NRC's independent NEPA review obligations under 10 C.F.R. Part 51 for any NRC licensing action under proposed Part 57.

SUMMARY

The Attorneys General of New Mexico, California, Delaware, Illinois, Maryland, Massachusetts, Oregon, Vermont, Washington, and the District of Columbia submit these comments as the chief legal officers of their jurisdictions, including many Agreement States that regulate radioactive materials licensees across the country. Our States have facilities and workers that will be directly affected by the deployment of thousands of microreactors under the framework this Proposed Rule would establish. We submit these comments not to obstruct the development of new nuclear technologies, but to insist that the NRC discharge the statutory duty Congress gave it: to ensure that the utilization of special nuclear material will provide adequate protection to the health and safety of the public before, not after, reactors are licensed and deployed.

The Proposed Rule fails that duty in ways that are both independently cognizable and mutually reinforcing. The entry criteria upon which the entire Part 57 framework rests—a 1 rem TEDE dose threshold borrowed from a different class of reactors and a 10 MTHM fuel mass limit derived from light water reactor assumptions—are neither calibrated to the specific technologies Part 57 is designed to license nor supported by the technical record required to make them defensible under the APA. The Proposed Rule acknowledges that two identical reactor designs could produce materially different site boundaries and safety classifications based solely on the applicant's choice of accident analysis methodology, yet prescribes no minimum conservatism floor. It eliminates emergency planning zones while simultaneously allowing exposures up to the level at which evacuations should begin. It permits design departures from approved manufacturing licenses to proceed to generic finality without any affirmative Commission safety finding, creating the conditions for fleet-wide propagation of safety-significant defects across hundreds of deployed units before any corrective proceeding develops a record. It proposes to license factories to build and fuel complete nuclear reactors without resolving what "construction" means in the factory context, when the NRC's backfit authority is triggered, or how that authority can be practically exercised against units already built, fueled, and in transport.

The proposed rule does all of this against a backdrop of at least seven other concurrent or pending major nuclear regulatory changes—the Part 53 final rule, the Byproduct Materials rule, the DOE/DOD Previous Authorization rule, the NRC Sunset rule, the DOE Zero-Based Regulating rule, the DOE Advanced Nuclear Reactor Categorical Exclusion, and the pending wholesale revision of Part 51—none of which the Proposed Rule analyzes for cumulative effect. Agreement States cannot assess compatibility obligations, emergency planning responsibilities, or byproduct material licensing interfaces without knowing how these rules interact. The NRC's cursory CER analysis is not a good faith attempt to answer that question.

The Proposed Rule also fails as a matter of basic administrative law. It provides a 45-day comment period—even more inadequate given the Proposed Rule's simultaneous publication with multiple other major rulemakings—for a framework that will govern the commercial deployment

of nuclear reactors for decades. It contains no alternatives analysis beyond the binary choice between the proposed rule and no action. And it projects 2,235 microreactor applications (based on industry materials not in the public record) over 40 years while declaring that state and local governments will bear no costs, a finding so plainly contradicted by the proposal's own terms that it does not constitute the reasoned explanation the APA requires.

In light of the above, the States respectfully demand that the NRC take the following specific actions:

First, withdraw the Proposed Rule or, at minimum, extend the public comment period by no fewer than 90 days from the date of the extension, and provide a corrected Federal Register notice that (a) defines "comparable risk profile" with sufficient specificity to give meaningful notice of the licensing pathway's scope; (b) discloses the industry materials relied upon in the regulatory analysis and places them in the public record; and (c) identifies all pending and recently finalized rulemakings that interact with Part 57 and provides an analysis of those interactions.

Second, before reproposing the rule, conduct and publish: (a) a technology-specific entry criterion analysis that establishes, for each fuel type and reactor design in Table 1, the burnup, enrichment, neutron spectrum, and fuel-form parameters that bound the radiological consequences the 1 rem TEDE criterion is intended to limit; (b) a minimum accident analysis methodology standard specifying the conservatism floor below which neither MHA nor MCA analyses will be accepted; (c) a definition of "construction" applicable to the factory-manufacture deployment model, with corresponding backfit trigger determinations; (d) a fleet-wide safety correction procedure applicable to deployed Part 57 units; and (e) an affirmative Commission-level safety finding requirement for all manufacturing license design departures, equivalent to and not less protective than 10 C.F.R. § 52.171(b)(2).

Third, the NRC must conduct a NEPA compliant environmental review of the Proposed Rule and withdraw the proposed categorical exclusion. The States oppose the application of a categorical exclusion for Part 57 licensing as inconsistent with and impermissible under NEPA. NEPA requires site-specific review—at minimum, an Environmental Assessment with public comment—for all Part 57 license applications, as well as a NEPA cumulative impacts analysis that addresses the combined effects of the Part 53 final rule, the DOE Advanced Nuclear Reactor CE, the DOE/DOD Previous Authorization rule, and the proposed Part 57 framework.

Fourth, conduct and publish a full UMRA cost analysis for state, local, and tribal governments before finalizing the rule, including quantified estimates of emergency response planning costs, transportation risk costs, spent fuel management costs, and Agreement State regulatory interface costs, as required by 2 U.S.C. § 1532(a)(2).

Fifth, clarify in the final Part 57 rule that: (a) prior DOE or DOD authorizations may be referenced as technical data in Part 57 applications but may not be treated as satisfying AEA's Section 182(a) adequate-protection finding; (b) the DOE categorical exclusion for advanced nuclear reactors does not satisfy NRC's independent NEPA review obligations under 10 C.F.R. Part 51; and (c) the NRC's mandatory backfit authority under proposed § 57.16(a)(1)(v) cannot be foreclosed by any combination of generic finality determinations, issue finality provisions, or prior DOE or DOD authorizations.

CONCLUSION

The States stand ready to work constructively with the Commission to develop a microreactor licensing framework that promotes innovation and energy security while honoring the Commission's statutory obligation to protect the public. That framework does not yet exist. Until it does, this Proposed Rule should not be finalized.

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