

June 12, 2026

Chairman Nieh, and Commissioners Wright, Crowell, Marzano, and Weaver
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Re: Comments of the Connecticut Department of Energy and Environmental Protection on NRC
Rulemaking – Licensing Requirements for Microreactors and Other Reactors With Comparable
Risk Profiles

Docket ID: NRC–2025–0379

Dear Chairman Nieh, and Commissioners Wright, Crowell, Marzano, and Weaver:

The Connecticut Department of Energy and Environmental Protection (DEEP) appreciates the opportunity to provide comments on the U.S. Nuclear Regulatory Commission’s (NRC) proposed revisions to 10 CFR Parts 1, 2, 10, 11, 19, 20, 21, 25, 26, 30, 40, 50, 51, 57, 70, 72, 73, 74, 75, 95, 140, 150.¹

Innovation in advanced nuclear technologies offers an important clean energy solution to meeting increasing energy demands. An exploration of increasing nuclear deployment must include a central commitment to ensuring safety, both to meet our shared mission of protecting public health and safety and to ensure the public has the trust and reassurance needed to support this increased deployment. The State of Connecticut (hereinafter “Connecticut” or “State”) has taken deliberate steps to explore the role of advanced nuclear energy through a community-centered framework established under Connecticut’s Public Act 25-173. This approach enables municipalities to opt in to hosting advanced nuclear facilities, and supports robust public engagement, technical evaluation, and informed local decision-making. Through this process, DEEP has found that transparency fosters public confidence, clarity, and trust in regulatory oversight. In the spirit of fostering transparency and engagement, DEEP recently held public informational meetings on exploring new and advanced nuclear capacity in Connecticut to facilitate stakeholder engagement and raise awareness about key issues in deployment of advanced nuclear technologies. Webinar recordings and other supporting materials can be found at this [link](#)². DEEP submits these comments consistent with the policy framework established in the Connecticut General Statutes (C.G.S.) regarding the development and regulation of nuclear energy and the use of radioactive materials

¹ “Licensing Requirements for Microreactors and Other Reactors With Comparable Risk Profiles,” 91 FR 23628 (May 1, 2026).

²

[https://www.dpuc.state.ct.us/DEEPEnergy.nsf/\\$EnergyView?OpenForm&Start=59&Count=30&Expand=76.2&Seq=8](https://www.dpuc.state.ct.us/DEEPEnergy.nsf/$EnergyView?OpenForm&Start=59&Count=30&Expand=76.2&Seq=8)

DEEP supports the development and utilization of atomic energy in a manner that protects public health and safety, promotes the common defense and security, and preserves the environment. This framework reflects a deliberate balance in Connecticut's state policy: the State is directed to adapt its laws and regulations to evolving conditions in ways that encourage the safe development of industries producing or utilizing atomic energy, while at the same time protecting the public interest. DEEP remains committed to working with the NRC and to maintaining a regulatory program compatible with the Atomic Energy Act of 1954.

This statutory policy is implemented through a defined governance structure within the State's government. Pursuant to Section 16a-102 of the C.G.S., the Commissioner of DEEP serves as the State's lead official responsible for coordinating all atomic energy development and regulatory activities and ensuring consistency across state agencies. The Commissioner's statutory role encompasses coordination with the federal government, including the NRC, and reinforces DEEP's responsibility to ensure that regulatory programs are comprehensive, compatible, and effectively implemented.

DEEP supports the comments submitted by the Mashantucket Pequot Tribal Nation (Docket ID NRC-2025-0379-0023), which emphasize the importance of timely government-to-government consultation and the need to identify and address potential impacts to cultural resources, archaeological sites, traditional cultural properties, burial sites, treaty-sensitive resources, and other Tribal interests before irreversible project commitments are made.

DEEP respectfully submits its own comments in Attachment A accompanying this letter.

DEEP's comments herein support the NRC's proposed risk-informed and performance-based framework for licensing microreactors and other reactors with comparable risk profiles under 10 CFR Part 57. DEEP generally supports the NRC's efforts to create a streamlined and efficient licensing pathway that appropriately reflects the lower potential consequences associated with these technologies and facilitates their timely deployment to support future energy needs. At the same time, DEEP emphasizes that licensing efficiency should be implemented in a manner that protects public health and safety, preserves defense-in-depth, maintains public confidence, and ensures meaningful opportunities for state, Tribal, local, and public engagement.

DEEP's comments therefore support maintaining key safety, security, transportation, and oversight provisions; retaining objective and transparent licensing criteria; providing clear guidance where new regulatory concepts are introduced; and gaining operational and regulatory experience with lower-risk reactors before considering additional reductions in oversight or expansion of these approaches to reactors with higher risk profiles. Recognizing that public trust and stakeholder participation will be essential to the successful deployment of advanced nuclear technologies, DEEP supports measures that encourage early site identification, community engagement, Tribal consultation, emergency planning coordination, and regulatory transparency. The compressed timeline for review and comments only allows for a limited review. Based on such cursory review, it appears that the proposed rule provides an appropriate foundation for innovation and deployment while maintaining reasonable assurance of public health and safety, common defense and security, environmental protection, and public confidence in the regulatory process.

At the same time, the volume and pace of concurrent rulemakings—more than twenty (20) underway, including multiple direct final rules—present significant challenges for Agreement States and other stakeholders. This compressed timeline limits the ability of DEEP to fully evaluate complex technical changes and the potential impacts, increasing the risk that implementation challenges may not be adequately addressed, and may render it pragmatically unfeasible to implement such technical changes within the timeframe prescribed.

It is essential that NRC rulemakings reflect a commitment to rigor, openness, and meaningful stakeholder engagement. Advancing significant regulatory changes without sufficient opportunity for review risks undermining public confidence—not only in existing programs, but also in the successful deployment of advanced nuclear technologies.

Given these considerations, DEEP respectfully recommends 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.

In closing and before turning to its specific comments in the Attachment A, DEEP remains supportive of the NRC's efforts to modernize its regulatory framework and to fulfill its mission to protect public health and safety and advance the nation's common defense and security by enabling the safe and secure use and deployment of civilian nuclear energy technologies and radioactive materials through efficient and reliable licensing, oversight, and regulation for the benefit of society and the environment. Achieving these objectives while maintaining public trust and strong oversight will require a deliberate, transparent, and inclusive process that fully incorporates the experience and expertise of Agreement States.

Thank you for the opportunity to comment on this important matter.

Sincerely,



Katie S. Dykes
Commissioner
Connecticut Department of Energy and Environmental Protection

ATTACHMENT A

Specific Requests for Comments

DEEP appreciates the NRC's request for specific for comments in Section VII of the Federal Register Notice (FRN) on the proposed "Licensing Requirements for Microreactors and Other Reactors With Comparable Risk Profiles."³ In response to the NRC's questions, DEEP offers the following perspectives:

1. Entry Criteria. The NRC is proposing both a dose limit and a material limit in proposed § 57.25 as entry criteria for using proposed part 57. The technical basis for these criteria are described in section V.C of this document. During its public meetings on this proposed rule in July 2025, the NRC received feedback from several stakeholders requesting that this criterion be removed and the NRC instead rely on a single entry criterion of a 1 rem (10 mSv) site boundary dose threshold.

Response to Question #1-1: In lieu of applying a deterministic material limit on the quantity of SNM to ensure safety, should the Commission consider an alternative performance-based entry criterion? Please explain the basis for your recommendation.

DEEP supports retaining the proposed deterministic material limit in 10 CFR § 57.25 as a necessary complement to the proposed dose-based entry criterion. While the proposed 1 rem (10 mSv) site boundary dose threshold provides an important performance-based measure of potential public consequence, relying exclusively on a calculated dose criterion would introduce significant uncertainty and unnecessary regulatory ambiguity, particularly for first-of-a-kind advanced reactor and fuel designs.

Dose-based evaluations are inherently dependent upon a series of analytical assumptions and modeling approaches, including assumptions regarding accident progression, radionuclide release fractions, source term characterization, chemical and physical form of released materials, meteorological dispersion, and dosimetric modeling. For many advanced microreactor concepts and novel fuel forms proposed under 10 CFR Part 57—including Tri-structural Isotropic particle (TRISO) fuels, metallic fuels, molten salt fuels, and other emerging technologies—the experimental operating and accident data necessary to validate these assumptions may be limited or unavailable. As a result, the calculated offsite dose for a given design may vary substantially depending on the analytical methods, conservatisms, and modeling assumptions selected by the applicant.

DEEP believes that a deterministic material limit provides an important regulatory backstop that reduces overreliance on uncertain analytical predictions and helps ensure a stable and transparent licensing framework. A material inventory threshold represents a practical, objective, and readily

³ "Licensing Requirements for Microreactors and Other Reactors With Comparable Risk Profiles," 91 FR 23628 (May 1, 2026).

verifiable parameter that can be independently confirmed through inspection, accounting, and material control measures. In contrast to highly model-dependent consequence calculations, the quantity of special nuclear material is directly measurable and less susceptible to variations in methodology or assumptions.

DEEP further believes that retaining both the dose limit and the material limit criteria proposed in 10 CFR § 57.25 appropriately balances risk-informed and deterministic regulatory principles. The proposed dual-threshold approach recognizes that low projected dose consequences alone should not automatically qualify a facility for a streamlined regulatory framework where substantial quantities of special nuclear material are present. Maintaining a deterministic inventory limit helps preserve appropriate defense-in-depth and supports public confidence that eligibility for 10 CFR Part 57 will not depend solely on optimistic or insufficiently validated analytical assumptions.

2. General License for Construction. During the development of this proposed rule, the NRC considered whether it could use a general license for rapid deployment of the types of reactors described herein. The general license topic is discussed in section IV.C of this document and 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. However, the NRC did determine that the issuance of a general license for some construction activities for "nth-of-a-kind" reactors would be permissible.

Response to Question #2–1: Besides the general license approach for certain construction activities in the proposed rule, are there other general licensing approaches for important components parts of utilization facilities that would benefit high-volume licensing or other regulatory processes for microreactors and other reactors with comparable risk profiles? Please explain the basis for your recommendation.

DEEP supports the NRC's conclusion that the use of general licenses under proposed 10 CFR Part 57 should remain limited to certain construction activities for "nth-of-a-kind" facilities, as described in the proposed rule. 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.

DEEP agrees with the NRC's determination that the Atomic Energy Act establishes important statutory limits on the use of general licenses for utilization facilities and that the proposed approach appropriately balances regulatory efficiency with the need to maintain adequate site-specific oversight and public confidence. 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. DEEP supports the comments submitted by the Mashantucket Pequot Tribal Nation (ID NRC-2025-0379-0023) regarding the importance of timely Tribal outreach and consultation before any irreversible or site-disturbing activities occur. In particular, DEEP agrees that streamlined or general-license construction authorities should not proceed in a manner that limits meaningful government-to-government engagement with federally recognized Tribes or reduces consideration of cultural resources, archaeological sites, or properties of religious and cultural significance.

DEEP further notes that advanced nuclear projects in Connecticut would remain subject to important state and local permitting and siting requirements independent of NRC licensing actions. For example, under the Connecticut Public Utility Environmental Standards Act⁴ certain energy and utility infrastructure projects require state siting review and approval processes that evaluate environmental, public health, land use, and community impacts. Maintaining clear coordination between NRC licensing activities and applicable state and local review authorities will be important to ensure transparent decision-making and public confidence as advanced nuclear technologies are considered for deployment.

For these reasons, DEEP supports maintaining the proposed limited and carefully bounded general-license approach for certain construction activities only and does not recommend expansion of general licensing authorities to additional portions of utilization facilities under 10 CFR Part 57.

Response to Question #2–2: Given that the NRC anticipates that a review timeline for the required part 70 license will align with the timeline to complete a safety and security review of reactors via proposed part 57, would there be any benefits provided by a general license for a reactor in addition to the general license for construction activities proposed in part 57? Please provide your explanation.

DEEP does not support expanding the use of general licensing for reactors beyond the limited scope proposed in 10 CFR Part 57 at this time. DEEP agrees with the NRC’s observation that the review timelines for the required 10 CFR Part 70 license and the proposed 10 CFR Part 57 safety and security reviews are expected to align and therefore does not currently see a sufficient regulatory or practical basis for establishing broader general licensing authorities for reactors themselves.

⁴ C.G.S. §§ 16-50g through 16-50ll

While DEEP recognizes the importance of supporting timely deployment of advanced nuclear technologies to help address growing energy reliability, resilience, and clean energy needs, DEEP believes it is equally important that the regulatory framework maintain public confidence through transparent, site-specific review and oversight. Public acceptance of advanced nuclear technologies will depend not only on the technical safety of these systems, but also on confidence that deployments are subject to meaningful regulatory review, appropriate public engagement, and clear accountability.

At this stage of advanced reactor development, many proposed microreactor technologies remain first-of-a-kind or early deployment concepts with limited operational experience. Even for standardized “nth-of-a-kind” designs, important site-specific considerations—including environmental conditions, emergency planning assumptions, transportation considerations, operational practices, and community impacts—continue to warrant individualized review. Expanding general licensing authorities too broadly before sufficient operational and regulatory experience is accumulated would undermine public trust and create perceptions that oversight is being reduced prematurely in favor of deployment speed.

DEEP believes the NRC’s proposed approach appropriately balances regulatory efficiency with the need to preserve adequate oversight and public transparency. The proposed limited general license for certain construction activities provides a measured initial step toward streamlining deployment for standardized designs while retaining appropriate NRC review of reactor operation and associated safety and security considerations.

DEEP also notes that introducing substantial additional general licensing provisions into the current rulemaking at this stage would unnecessarily complicate and delay completion of this important regulatory framework. Given the growing interest in near-term deployment of advanced nuclear technologies to support energy reliability and decarbonization objectives, minimizing unnecessary delays in implementation of 10 CFR Part 57 is itself an important policy consideration. Expanding the scope of general licensing within this rulemaking would likely require additional legal, technical, and policy analysis and would prolong finalization of the rule, thereby delaying the very near-term deployments and regulatory efficiencies the rule is intended to support.

As additional experience is gained through licensing, construction, operation, and oversight of advanced reactors under 10 CFR Part 57, the NRC would remain well-positioned to reevaluate whether additional general licensing approaches may be appropriate in the future. If operational evidence, inspection experience, and demonstrated performance of standardized designs support expanded use of general licenses without creating undue risk or diminishing public confidence, the NRC could consider such changes through a future rulemaking process supported by a robust technical analysis and stakeholder engagement.

Accordingly, DEEP supports retaining the proposed limited scope of general licensing in 10 CFR Part 57 for construction activities at this time and does not recommend broader general licensing authority for reactors or additional utilization facility components.

3. Improvements to Proposed Part 57 Requirements. The NRC developed this proposed rule with the intent to establish a risk-informed and performance-based regulatory framework for high-volume licensing of microreactors and other reactors with comparable risk profiles. The proposed rule would provide licensing pathways and streamlined requirements with increased flexibility, as compared to that of 10 CFR parts 50 and 52, in meeting certain technical requirements. Examples of this increased flexibility would include applicants being able to specify industry-approved standards such as for QA programs and technical codes and standards.

Response to Question #3–1: Should any requirements in proposed part 57 be eliminated or made less burdensome or more flexible? If so, which ones? For existing requirements in 10 CFR chapter I that are referenced by proposed part 57, should any of them be similarly revised to the extent that they are relied upon by a proposed part 57 requirement? If so, which ones? Please explain the basis for your recommendation.

DEEP does not recommend eliminating any additional requirements in proposed 10 CFR Part 57 or further reducing the burden of existing requirements at this time. DEEP recognizes that the NRC has already incorporated substantial regulatory flexibility into the proposed framework through its risk-informed and performance-based approach. The proposed rule includes numerous provisions intended to improve licensing efficiency, including streamlined licensing pathways, reduced prescriptive requirements, the use of industry-approved quality assurance programs and technical standards, alternative approaches to emergency preparedness and security, flexible staffing provisions, and reduced inspection and oversight expectations relative to traditional reactor licensing frameworks.

While DEEP supports the NRC's efforts to develop a licensing framework that is appropriately tailored to the risk profile of microreactors and other reactors with comparable risk profiles, 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.

For example, the proposed framework would provide applicants flexibility in the 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. Individually, each of these provisions may be reasonable and justifiable. Collectively, 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.

DEEP believes it would be prudent to gain regulatory and operational experience under the proposed framework before considering additional reductions in requirements or oversight

expectations. As advanced reactor technologies move through licensing, construction, operation, inspection, and eventual decommissioning, both the NRC and stakeholders will gain valuable information regarding the effectiveness of the 10 CFR Part 57 framework and the extent to which the various performance-based provisions function as intended.

Moreover, maintaining public confidence will be critical to the successful deployment of advanced nuclear technologies. Connecticut's recent efforts to evaluate advanced nuclear energy through a community-centered process have reinforced the importance of transparency, clear regulatory expectations, and visible oversight in building public trust. Additional reductions in regulatory requirements at this stage would create the perception that efficiency is being prioritized over safety before sufficient experience exists to demonstrate the effectiveness of the proposed framework.

Accordingly, DEEP does not recommend eliminating or further reducing any requirements in proposed 10 CFR Part 57, nor does DEEP support revising existing requirements in 10 CFR Chapter I solely to provide additional flexibility for Part 57 applicants. Once meaningful licensing and operating experience has been accumulated under the new framework, the NRC may be in a better position to evaluate whether further adjustments are warranted. At present, DEEP believes the proposed rule already provides substantial flexibility while preserving the defense-in-depth principles necessary to maintain reasonable assurance of public health and safety and public confidence in the regulatory process.

Response to Question#3–2: Recognizing that part 57 shares similar features with part 53, are there any provisions in part 57 that should be adapted for part 53 to enhance their complementary nature? For example, should the NRC include provisions in part 53 that would provide a general license for partial reactor construction or allow applicants to reference a general area for siting? If so, what, if any, modifications to the language in part 57 would be needed for it to be appropriate in part 53?

DEEP does not recommend, at this time, incorporating additional 10 CFR Part 57 provisions into 10 CFR Part 53 beyond those already being considered by the NRC. While DEEP recognizes the value of maintaining consistency between regulatory frameworks where appropriate, DEEP believes the most prudent course is to first gain experience implementing 10 CFR Part 57 and evaluate the effectiveness of its novel licensing approaches before extending them to reactor designs with potentially greater hazard profiles.

10 CFR Part 57 contains numerous innovative regulatory features intended to facilitate deployment of microreactors and other reactors with comparable risk profiles, including performance-based requirements, streamlined licensing pathways, flexible operational programs, and limited use of general licensing authorities. Many of these provisions represent significant departures from existing reactor licensing frameworks and have not yet been tested through actual licensing, construction, operation, inspection, and oversight activities.

Before adapting additional 10 CFR Part 57 provisions into 10 CFR Part 53, DEEP believes it is important to understand which of these innovations provide meaningful regulatory efficiencies

while continuing to maintain safety, security, transparency, and public confidence. Implementation experience will provide valuable information regarding which provisions applicants actually choose to utilize, which flexibilities produce measurable benefits, and whether any unintended consequences emerge during deployment and oversight. Such experience would provide a stronger technical analysis and regulatory basis for determining whether similar approaches are appropriate for broader application under 10 CFR Part 53.

DEEP is particularly cautious regarding the potential expansion of provisions such as general licensing authorities, generalized siting approaches, or other significant streamlining measures to reactors with larger inventories of radioactive material or greater potential consequences. 10 CFR Part 57 was specifically developed for microreactors and other reactors with comparable risk profiles. It would be premature to extend these approaches to higher-risk reactor designs before sufficient operational and regulatory experience has been gained demonstrating their effectiveness for lower-risk facilities.

Accordingly, DEEP recommends that the NRC first implement 10 CFR Part 57 as noted on our comments, evaluate the performance of its licensing innovations through practical application, and use those lessons learned to inform any future consideration of corresponding changes to 10 CFR Part 53. This measured approach will allow the NRC to identify which provisions provide the greatest benefit to licensing efficiency while continuing to maintain reasonable assurance of public health and safety, common defense and security, and public confidence in the regulatory process.

Response to Question#3–3: Because the proposed part 57 directs licensees to use 10 CFR 50.59, which uses the term “important to safety,” and that term is not used in part 57, should the NRC explain in a guidance document how a part 57 licensee should use 10 CFR 50.59 or should the final part 57 include its own specific 10 CFR 50.59-like process?

DEEP supports the continued use of the existing 10 CFR § 50.59 process for 10 CFR Part 57 licensees and does not believe that a separate 10 CFR Part 57-specific change process is necessary at this time. The 10 CFR § 50.59 framework has been successfully utilized by 10 CFR Part 50 licensees for decades and provides a well-established, risk-informed mechanism for evaluating changes without prior NRC approval while preserving NRC oversight of changes that could have safety significance.

However, DEEP believes that supplemental NRC guidance will be necessary to ensure consistent application of the 10 CFR § 50.59 process within the 10 CFR Part 57 framework. Specifically, because 10 CFR Part 57 does not utilize the term "important to safety" in the same manner as existing reactor regulations, the NRC should clearly explain how 10 CFR Part 57 licensees are expected to interpret and apply that concept when conducting 10 CFR § 50.59 evaluations.

This guidance is particularly important because many advanced reactor designs proposed for licensing under 10 CFR Part 57 rely heavily on inherent safety characteristics, passive safety features, and simplified operational concepts as part of the basis for concluding that these reactors present lower risks and consequences than traditional reactor designs. Changes that

affect these characteristics could have implications that extend beyond the immediate safety function of a particular structure, system, or component and could potentially alter the fundamental assumptions that supported eligibility for licensing under 10 CFR Part 57.

Accordingly, DEEP recommends that the NRC provide clear guidance regarding what constitutes a significant change to design features, safety functions, or operational assumptions that were relied upon in the original licensing basis. The guidance should specifically address changes that could affect the reactor's overall risk profile, source term assumptions, accident consequences, or other factors that support the determination that the facility remains within the low-consequence category envisioned by 10 CFR Part 57. Licensees should not be permitted to make incremental changes that, when viewed collectively, would materially alter the basis upon which the reactor was originally determined to qualify for the 10 CFR Part 57 framework.

DEEP also recommends that NRC guidance clearly defines the distinction between passive and active safety features for purposes of 10 CFR Part 57 change evaluations. Because passive safety features are often a key element of advanced reactor safety cases and are frequently cited as a basis for reduced regulatory requirements, any change that converts a safety function from passive operation to active operation, automated actuation, or operator action should be presumed to be safety significant. Similarly, changes that increase reliance on operator actions or active systems to perform functions previously accomplished through passive means should receive heightened scrutiny.

DEEP believes the guidance should explicitly state that changes that significantly adversely affect passive safety features, inherent safety characteristics, or operator-independent safety functions are generally outside the scope of routine licensee change authority and should require prior NRC review and approval. Such an approach would help ensure that reactors licensed under 10 CFR Part 57 continue to maintain the safety characteristics that formed the basis for their streamlined regulatory treatment.

DEEP also recommends that 10 CFR Part 57 licensees be subject to reporting requirements comparable to those currently applicable to 10 CFR Part 50 licensees for changes implemented under 10 CFR § 50.59. Specifically, licensees should be required to submit periodic reports describing changes, tests, and experiments conducted without prior NRC approval. This reporting requirement has long served as an important transparency mechanism within the existing reactor regulatory framework and provides both the NRC and external stakeholders visibility into how licensees are utilizing their change authority. Such reports allow regulators to identify trends, evaluate whether the change process is functioning as intended, and assess whether cumulative modifications may be affecting the facility's licensing basis.

For these reasons, DEEP supports continued use of the established 10 CFR § 50.59 process but recommends that the NRC develop detailed implementation guidance tailored to 10 CFR Part 57 to ensure that the process is applied consistently and in a manner that preserves the safety basis, risk profile, and public confidence associated with the 10 CFR Part 57 framework. Such guidance should clearly define the application of the term "important to safety," establish appropriate thresholds for changes affecting the low-consequence basis of 10 CFR Part 57

facilities, provide clear criteria regarding passive and active safety features, and retain reporting requirements comparable to those currently applicable to 10 CFR Part 50 licensees. Together, these measures would promote regulatory consistency, transparency, and continued NRC visibility into changes made under licensee authority while preserving the safety assumptions upon which the 10 CFR Part 57 framework is based.

Response to Question#3–4: Is a single notice in the Federal Register for each joint application for a construction permit and associated operating license(s) sufficient and appropriate for 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?

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.

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 Officers 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.

Additional outreach methods should also be considered, including publication on NRC and applicant websites, direct notification to local governments within the geographic area under consideration, electronic mailing lists, public information meetings, and appropriate outreach to federally recognized Tribes. The specific notice mechanisms should be commensurate with the geographic scope and potential impacts of the proposed action.

Because one of the key challenges associated with future nuclear deployment is maintaining public confidence, DEEP generally supports providing the broadest practical notice consistent with efficient regulatory decision-making. For large geographic areas in particular, multiple notification pathways will help ensure that affected stakeholders are aware of hearing opportunities and are empowered to participate meaningfully in the siting and licensing process.

Response to Question#3–5: Should the NRC look holistically at the duration of renewals for manufacturing licenses, design certifications, and standard design approvals across all parts?

DEEP notes that any consideration of license, certification, or approval durations should be evaluated holistically across the NRC's regulatory framework and should remain consistent with the requirements and intent of the Atomic Energy Act. To the extent that manufacturing licenses, design certifications, standard design approvals, and related regulatory approvals serve similar purposes across different licensing frameworks, a coordinated review would help promote regulatory consistency and predictability.

However, DEEP does not believe that revisiting renewal durations should be a priority at this time. The NRC is currently pursuing several significant advanced reactor licensing initiatives, including 10 CFR Parts 53 and 57, that are intended to improve licensing efficiency and reduce regulatory uncertainty. In addition, the NRC has identified opportunities to improve licensing review processes and timelines. Given these ongoing efforts, DEEP believes that existing renewal periods generally provide adequate regulatory certainty while preserving appropriate opportunities for periodic NRC review and reassessment.

In particular, DEEP believes that the current 40-year duration for design certifications and similar approvals provides a substantial period of regulatory stability for applicants, vendors, investors, and operators. This duration appears sufficient to support reactor deployment and commercialization while ensuring that important safety, security, and technological developments can be considered periodically through the renewal process.

DEEP also notes that many of the advanced reactor technologies that would utilize these licensing pathways have limited or no operating history. As a result, there is currently insufficient operational experience to fully understand long-term performance characteristics, aging effects, degradation mechanisms, maintenance requirements, and other lifecycle considerations that may become evident only after years of operation. For first-of-a-kind and early-generation advanced reactor technologies, it would be premature to conclude that substantially longer approval durations are warranted before this experience has been accumulated.

Accordingly, while DEEP supports a holistic evaluation of renewal durations if the NRC chooses to undertake such an effort in the future, DEEP does not currently see a compelling need to modify existing durations. The more prudent course would be to gain experience with deployment and operation of advanced reactors under the new licensing frameworks and use that experience to inform any future consideration of changes to approval and renewal periods.

Response to Question#3–6: Should the NRC consider periodicities other than the proposed 5-year interval for FSAR updates?

DEEP supports a risk-informed approach to the periodic updating of Final Safety Analysis Reports (FSARs) and believes that a single update interval may not be appropriate for all changes made under a 10 CFR Part 57 license.

The primary purpose of FSAR updates is to ensure that the current licensing basis and safety assumptions for a facility remain transparent, accurate, and readily available to the NRC, state agencies, and the public. As such, DEEP believes that the frequency of updates should be commensurate with the potential safety significance of the underlying changes.

Specifically, DEEP recommends that the NRC consider a tiered approach to FSAR updates based on the significance of changes made by the licensee. For changes that require a full evaluation under the 10 CFR § 50.59 process, DEEP believes a shorter update interval, such as every two years, would be appropriate. These changes have already been determined by the licensee to warrant a detailed safety evaluation and therefore represent modifications that may be of greater regulatory interest and significance.

Conversely, for changes that screen out of the 10 CFR § 50.59 evaluation process and are determined not to affect the licensing basis in a meaningful way, the proposed five-year update interval may be appropriate. Such changes are generally administrative or otherwise of low significance and are less likely to affect the public's understanding of the facility's safety basis.

DEEP believes this risk-informed approach would provide more timely visibility into safety-significant modifications while avoiding unnecessary burden associated with frequent updates for minor changes. It would also help ensure that publicly available FSARs remain reasonably current with respect to design, operational, and licensing basis information that may be important to understand the facility's risk profile.

More broadly, DEEP believes that transparency is particularly important for advanced reactor technologies that will be operating under new licensing frameworks. Timely incorporation of risk-significant changes into the FSAR will help maintain public confidence, support regulatory oversight, and ensure that stakeholders have access to accurate information regarding the facility's current licensing basis.

Accordingly, DEEP recommends that the NRC consider a graded FSAR update schedule that aligns reporting frequency with the significance of changes made under licensee authority, rather than relying solely on a uniform five-year update interval for all modifications.

4. Early Site Permit Considerations for Proposed Part 57. Under the current regulatory framework, applicants pursuing licenses under 10 CFR part 50 must address site suitability, environmental, and emergency preparedness issues as part of their CP and OL applications. By contrast, 10 CFR part 52 provides an early site permit (ESP) process that allows applicants to resolve site-related issues in advance of design certification or combined license applications. As interest grows in deploying a wider range of advanced reactor technologies, including microreactors and other reactors with comparable risk profiles, stakeholders have suggested that a similar ESP process for applicants for licenses for microreactors and other reactors with comparable risk profiles could increase licensing efficiency. Such a process could enable early resolution of site issues, reduce duplicative reviews, and provide greater certainty to project developers while maintaining the NRC's high standards for safety and environmental protection.

Response to Question #4–1: Should a proposed part 57-compatible early site permit process be developed? Describe the potential value of creating a proposed part 57-compatible ESP process, including the benefits and drawbacks of such an approach for applicants and stakeholders, and whether this process could facilitate more timely and predictable licensing outcomes.

DEEP supports the development of a 10 CFR Part 57-compatible Early Site Permit (ESP) process. In DEEP's experience, site identification, community engagement, and stakeholder acceptance are among the most critical factors influencing the successful deployment of advanced nuclear technologies. A well-designed ESP process would provide substantial value by allowing applicants, regulators, states, local governments, Tribal governments, and host communities to evaluate site suitability and address key site-related issues early in the project development process.

DEEP believes that early resolution of siting, environmental, emergency preparedness, and community acceptance considerations can reduce uncertainty for applicants and stakeholders alike. Establishing that a site is both technically suitable and supported by the host community before significant investments are made in reactor design integration, licensing, and construction planning would improve project predictability and reduce the likelihood of delays later in the licensing process. Such an approach would also provide greater transparency and create meaningful opportunities for public participation at a stage when community input can have the greatest influence on project outcomes.

Connecticut's recent efforts to evaluate advanced nuclear energy through a community-centered framework have reinforced the importance of engaging communities early and often in discussions regarding potential deployment. DEEP believes that an ESP process would complement these efforts by providing a structured mechanism for early stakeholder engagement

and site evaluation while reducing the potential for duplicative reviews later in the licensing process.

At the same time, DEEP believes it is important that any 10 CFR Part 57-compatible ESP process be appropriately tailored to the lower-risk profile of microreactors and other reactors with comparable risk profiles. Simply applying the existing 10 CFR Part 52 ESP framework to 10 CFR Part 57 facilities may not fully achieve the NRC's objective of creating a more efficient and risk-informed licensing pathway. The costs, documentation requirements, review timelines, and regulatory burden associated with a 10 CFR Part 57 ESP should reflect the reduced potential consequences and simplified safety characteristics of the reactors intended to be licensed under 10 CFR Part 57.

Accordingly, DEEP would support a streamlined ESP process that provides meaningful regulatory certainty while maintaining protection of public health, safety, security, and the environment. Such a process should seek to reduce unnecessary complexity, shorten review schedules where appropriate, and lower applicant costs relative to traditional ESP reviews, while still ensuring robust environmental review, meaningful public participation, state and Tribal engagement, and adequate consideration of site-specific hazards and emergency planning assumptions.

In summary, DEEP believes that a risk-informed and appropriately scaled 10 CFR Part 57-compatible ESP process has the potential to improve licensing predictability, facilitate earlier stakeholder engagement, and support more timely deployment of advanced reactor technologies. If carefully designed to reflect the lower-consequence nature of 10 CFR Part 57 facilities, such a process would provide significant benefits to applicants, regulators, and host communities while maintaining the NRC's commitment to safety, environmental protection, and public confidence.

Response to Question #4–2: What types of site issues (e.g., seismic, emergency planning, tribal consultations) would benefit most from early resolution under such a process?

DEEP believes that several categories of site-related issues would benefit significantly from early resolution through a 10 CFR Part 57-compatible Early Site Permit (ESP) process. In particular, Tribal consultation, site characterization parameters, environmental considerations, emergency planning interfaces, and community engagement activities are well-suited for early review and resolution because they can substantially influence project feasibility, stakeholder acceptance, and licensing predictability.

DEEP strongly supports the inclusion of Tribal consultation as an important element of any 10 CFR Part 57-compatible ESP process. In this regard, DEEP supports the comments submitted by the Mashantucket Pequot Tribal Nation (Docket ID NRC-2025-0379-0023), which emphasizes the importance of timely government-to-government consultation and the need to identify and address potential impacts to cultural resources, archaeological sites, traditional cultural properties, burial sites, treaty-sensitive resources, and other Tribal interests before irreversible project commitments or damage to cultural sites are made. Early consultation provides the greatest opportunity to identify concerns, evaluate alternatives, and avoid potential conflicts later

in the licensing process. It also helps ensure that streamlined licensing pathways do not inadvertently reduce opportunities for meaningful Tribal engagement.

DEEP also believes that site-specific parameters used to establish and verify the site's design and licensing basis should be addressed early. For microreactors and other reactors with comparable risk profiles, the NRC should seek to identify those key site parameters that define the site's licensing envelope and develop simplified approaches for demonstrating compliance. Consistent with the lower-consequence nature of 10 CFR Part 57 facilities, verification of these parameters should, where appropriate, rely on readily available environmental, geological, hydrological, meteorological, and land-use data rather than requiring extensive site-specific investigations that may be more appropriate for larger reactors with greater potential consequences. Early confirmation of these site characteristics would provide significant certainty to applicants while reducing the likelihood of later licensing delays.

Emergency planning considerations would also benefit from early resolution. DEEP notes that the absence of a traditional emergency planning zone should not be interpreted as the absence of emergency planning requirements. Regardless of the reactor's risk profile, emergency preparedness remains an important element of public protection and public confidence. Therefore, DEEP recommends that a 10 CFR Part 57-compatible ESP process include preliminary evaluation of emergency planning concepts and identify expected roles and responsibilities among the permittee, local governments, emergency management organizations, public safety agencies, and other stakeholders. While detailed emergency plans may not be necessary at the ESP stage, establishing a shared understanding of responsibilities and confirming the feasibility of the proposed emergency planning approach would help reduce uncertainty, increase public confidence, and support more efficient licensing reviews later in the process.

Additional areas that may benefit from early resolution include environmental reviews, transportation considerations, water availability, flood hazards, seismic characteristics, land-use compatibility, and interactions with existing infrastructure. Addressing these issues early can improve project predictability and reduce the potential for duplicative reviews while providing greater transparency to stakeholders.

Overall, DEEP believes that a 10 CFR Part 57-compatible ESP process should focus on those site issues that are most likely to affect project viability, stakeholder acceptance, and licensing efficiency. Early resolution of these matters can facilitate more predictable licensing outcomes while preserving meaningful opportunities for state, local, Tribal, and public engagement.

Response to Question #4–3: Would a part 52-type ESP process reduce licensing uncertainty and costs for developers, and if so, how?

DEEP believes that an Early Site Permit (ESP) process—appropriately adapted to the risk profile and licensing structure of 10 CFR Part 57—would reduce licensing uncertainty and lower overall development costs for applicants. DEEP's experience indicates that early identification of a

technically suitable site, combined with early and meaningful community engagement, is one of the strongest predictors of a project's long-term success.

A 10 CFR Part 57-compatible ESP process would reduce uncertainty for several reasons:

- Early resolution of site suitability issues enables applicants to confirm that a proposed location meets regulatory, environmental, and safety expectations before significant design or licensing costs are incurred. This reduces the likelihood of late-stage redesigns, site changes, or licensing delays.
- Upfront community and stakeholder engagement provides early indication of whether a community is willing to host a microreactor or similar facility. Connecticut's experience with community-centered approaches demonstrates that early engagement builds trust, identifies concerns, and provides applicants and investors with confidence that the project is viable. This engagement can prevent costly opposition or project pause points later in the process.
- Clearer project feasibility early in development improves financing prospects. Investors and developers receive greater certainty when a site has been evaluated and accepted through a transparent regulatory process prior to full-scale design, detailed licensing work, or construction commitments.
- Resolving site-related environmental, land-use, and emergency-planning issues at the ESP stage allows subsequent license applications to focus on design and operational matters without re-evaluating settled site findings and reduces the likelihood of duplicative reviews.
- Early clarity on siting expectations provides predictability for state, local, and Tribal governments, allowing governmental partners to plan for necessary environmental reviews, emergency management roles, infrastructure needs, and intergovernmental coordination.

DEEP views these benefits as consistent with the goals of a risk-informed 10 CFR Part 57 framework. Importantly, any ESP process should be scaled to the lower potential consequences of microreactors and other reactors intended for 10 CFR Part 57. A simple transposition of the 10 CFR Part 52 ESP requirements would undermine the rule's objectives. Instead, DEEP supports a streamlined, performance-based ESP that maintains necessary environmental and safety reviews but avoids unnecessary burden.

Overall, DEEP believes that a 10 CFR Part 57-compatible ESP process—designed to support early community engagement, early resolution of key site issues, and early confirmation of project feasibility—would meaningfully reduce licensing uncertainty and overall project costs, while reinforcing host-community confidence and improving the likelihood of successful deployment.

5. Decommissioning Considerations for Proposed Part 57. Some stakeholders shared with the NRC at the July 2025 public meetings that they envision that microreactors could be transported to a facility at a different location than the operating site to be decommissioned or refurbished and refueled. If refurbished and refueled, the reactor would be redeployed for

another operating cycle but eventually it would permanently cease operation and decommissioning would be necessary.

Response to Question #5–1: Besides the volume of waste, would there be differences in the process for refurbishment versus decommissioning of the reactor, if both occurred at the same facility, that would be important to consider with regard to enabling more efficient and safe streamlining of the decommissioning licensing and the license termination processes? Please provide a rationale supporting your comment.

DEEP believes that refurbishment and decommissioning are fundamentally different activities and should not be treated identically for regulatory purposes, even if both occur at the same facility and involve many of the same physical systems and components.

The primary distinction is that decommissioning is intended to permanently terminate operation of the reactor and prepare the facility or reactor system for final disposition, whereas refurbishment is intended to restore, upgrade, or replace components to enable continued operation and eventual redeployment of the reactor. As a result, refurbishment activities must incorporate considerations that are not present during decommissioning.

Specifically, refurbishment should require a comprehensive evaluation of structures, systems, and components that are intended to remain in service. Such evaluations should include inspection for age-related degradation, fatigue, corrosion, embrittlement, neutron damage, material compatibility concerns, and other operational wear mechanisms that could affect future performance or safety. Components retained for future operation should be verified to continue meeting applicable design, quality assurance, and safety requirements and should remain within the approved service life and design basis of the reactor system.

DEEP further believes that refurbishment activities should be conducted pursuant to a documented refurbishment program approved by the NRC and subject to appropriate regulatory oversight. Such a program should establish requirements for inspection, testing, acceptance criteria, component replacement, configuration management, quality assurance, records retention, and verification that the reactor remains capable of safe operation following refurbishment. Regulatory oversight during refurbishment is particularly important where activated components, tritium-bearing systems, shielding structures, confinement systems, or other safety-significant equipment are repaired, modified, or replaced.

By contrast, decommissioning activities are focused on the safe removal of radioactive material, contamination control, waste management, decontamination, dismantlement, and demonstration that license termination criteria have been satisfied. Because components are not intended for future use, decommissioning generally does not require the same level of evaluation regarding continued operational suitability, remaining service life, or future performance.

DEEP therefore recommends that any future regulatory framework clearly distinguish between refurbishment and decommissioning activities. While opportunities may exist to streamline certain administrative processes where both activities occur at the same facility, such

streamlining should not diminish the regulatory review, inspection, testing, and quality verification necessary to ensure that refurbished reactors can safely support future operating cycles. Maintaining separate regulatory pathways for refurbishment and decommissioning will help ensure that public health and safety are protected while providing regulatory clarity for developers pursuing transportable or redeployable reactor designs.

Response to Question#5–2: The NRC’s current regulations generally restrict the use of activities conducted after permanent cessation of operations, unless an exemption is granted. The NRC has received stakeholder interest in accessing decommissioning funds during reactor operation for the removal or replacement of major components when those activities would ultimately be necessary for decommissioning. The NRC is seeking stakeholder input on whether, and under what conditions, limited access to decommissioning trust funds for such activities during reactor operation should be considered. For example, is there an anticipated need to access radiological decommissioning funds during operations to facilitate the removal of a reactor for refurbishment or other major radioactive component disposal? Please provide a rationale supporting your comment.

DEEP supports allowing the use of decommissioning trust funds during operations for activities that have a clear, direct, and demonstrable nexus to radiological decommissioning. In DEEP’s view, the purpose of decommissioning funding is to ensure that adequate financial resources are available to safely remove radioactive material, decontaminate facilities, manage radioactive waste, and ultimately achieve license termination. Where activities performed during operations directly advance those objectives, limited use of decommissioning funds may be appropriate.

For example, DEEP believes access to decommissioning funds may be justified to support the removal, packaging, transportation, disposal, or remediation of a permanently retired reactor or major radioactive component at a multi-reactor site, even where other reactor(s) continue operating. Similarly, for transportable or redeployable reactor designs, use of decommissioning funds may be appropriate where funds are used to support the permanent removal and disposition of activated or contaminated component(s) that would otherwise require decommissioning at a later date.

DEEP recognizes that allowing limited access to decommissioning funds during operations would provide operational efficiencies, reduce future decommissioning liabilities, and support timely removal of radiological hazards. However, any such flexibility should be accompanied by appropriate financial oversight and regulatory controls to ensure that sufficient funding remains available to complete final site decommissioning when operations ultimately cease.

Accordingly, DEEP recommends that any framework permitting access to decommissioning trust funds during operations include requirements for periodic reassessment of decommissioning cost estimates and demonstration of financial assurance adequacy. Licensees seeking to use decommissioning funds during operations should be required to demonstrate that:

- the proposed activity has a direct nexus to radiological decommissioning;

- the expenditure will not adversely affect the ability to complete final site decommissioning;
- updated site-specific cost estimates support continued funding adequacy; and
- sufficient financial assurance mechanisms remain in place to address future decommissioning obligations.

DEEP further recommends that the NRC retain appropriate review and approval authority for significant withdrawals from decommissioning trust funds to ensure consistency, transparency, and protection of public health and safety.

Overall, DEEP supports a risk-informed and practical approach that allows decommissioning funds to be used for legitimate decommissioning-related activities conducted during operations, provided that robust financial oversight ensures that adequate resources remain available for final site decommissioning and license termination.

6. Release of Part of a Nuclear Plant or Site for Unrestricted Use. Under this proposed rule, a licensee would be able to release portions of its nuclear plant or site for unrestricted use before license termination by license amendment, or by including plans to release parts of the site in the decommissioning plan. However, the proposed rule does not include a specific provision for release of a part of a site for unrestricted use before license termination as licensees can request under § 50.83 and § 53.1080. Under those provisions, licensees may request a partial site release by providing specific information to the NRC, with the extent of the necessary information depending on whether the area to be released has been designated as “nonimpacted” or “impacted.” The NRC is considering whether specific provisions for partial site release, similar to those in parts 50 and 53, should be included in proposed part 57. In addition, because proposed part 57 would include provisions for the NRC to approve decommissioning plans well before decommissioning activities would commence, the NRC is asking whether there should be differences between a provision for releasing part of a site in proposed part 57 and similar provisions in parts 50 and 53.

Response to Question#6-1: Should the NRC include a specific provision for releasing a part of a nuclear plant or site for unrestricted use before license termination in proposed part 57? If so, how should the NRC consider adapting the approach in § 50.83 and § 53.1080 to make the provision applicable to licensees under proposed part 57?

DEEP supports allowing licensees to release portions of a nuclear plant or site for unrestricted use prior to final license termination where the licensee can demonstrate that the applicable radiological criteria for unrestricted release have been satisfied and NRC approval has been obtained.

However, DEEP is not convinced that a separate or substantially different regulatory process is necessary under proposed 10 CFR Part 57. As currently proposed, licensees may include planned partial decommissioning and site release activities within decommissioning plans that are reviewed and approved as part of the licensing process. In addition, modifications to approved decommissioning approaches may be addressed through license amendment requests subject to

NRC review and approval. Collectively, these existing mechanisms appear capable of accommodating partial site release activities without the need to establish an entirely separate regulatory framework.

Accordingly, DEEP believes the NRC should first evaluate whether the flexibility already provided through the proposed decommissioning planning and license amendment provisions is sufficient to address anticipated 10 CFR Part 57 facility configurations and decommissioning scenarios. If the NRC determines that additional clarity would be beneficial, DEEP would support a streamlined provision modeled after 10 CFR §§ 50.83 and 53.1080 that provides a clear pathway for NRC approval of partial site release while avoiding unnecessary duplication of existing regulations.

DEEP also notes that many facilities licensed under 10 CFR Part 57 may differ significantly from traditional nuclear power reactor sites in terms of size, configuration, operational footprint, and decommissioning strategy. Therefore, any partial site release provisions should remain performance-based and sufficiently flexible to accommodate a variety of facility designs rather than imposing overly prescriptive requirements developed for large commercial reactor sites.

Finally, DEEP recommends that the NRC require licensees to reassess and update their decommissioning cost estimates following any approved partial decommissioning or site release activity. Actual decommissioning experience, waste volumes, labor requirements, remediation costs, and survey results obtained during partial site release activities may provide valuable information regarding the remaining scope of decommissioning. Incorporating these lessons learned into updated cost estimates would result in adjustments either upward or downward and would help ensure that financial assurance mechanisms remain appropriately aligned with the anticipated cost of final site decommissioning and license termination.

Overall, DEEP supports the concept of partial site release prior to license termination but believes the proposed 10 CFR Part 57 framework already provides mechanisms capable of accomplishing this objective. Any additional provisions should focus on providing regulatory clarity and efficiency while maintaining appropriate NRC oversight and ensuring continued adequacy of decommissioning funding.

7. Transportation Dose Rates for Proposed Part 57. For the certification of a transportation package, specific dose rate requirements must be met during normal operations, normal conditions of transport, and hypothetical accident conditions. For example, under § 71.47(a), during normal conditions incident to transport, the maximum dose rate cannot exceed 2 millisieverts/hour (2 mSv/h) (or 200 millirem/hour) (200 mrem/h) at any point on the external surface of the package, unless prepared for transport as an exclusive use package pursuant to § 71.47(b). Section 71.47(b) has additional operational requirements and specified dose rates that include 10 mSv/h (1000 mrem/h) at any point on the external surface of the package, 2 mSv/h (200 mrem/h) at any point on the outer surface of the vehicle, 0.1 mSv/h (10 mrem/h) at any point 2 meters (80 inches) from the outer lateral surfaces of the vehicle, and 0.02 mSv/h (2 mrem/h) in any normally occupied space, except that this provision does not apply to private carriers, if exposed personnel under their control wear radiation dosimetry devices in

conformance with § 20.1502, “Conditions requiring individual monitoring of external and internal occupational dose.” The additional requirements for Type B packages during accident conditions is that no external radiation dose rate may exceed 10 mSv/h (1 rem/h) at 1 meter (40 inches) from the external surface of the package. These dose rates were developed in coordination with both the Department of Transportation and the International Atomic Energy Agency. The NRC is considering whether existing dose rate limits for the transportation of radioactive material under 10 CFR part 71 remain appropriate in light of the anticipated deployment of advanced reactors, including microreactors. Microreactors may present unique transportation considerations, such as the movement of fueled or partially fueled reactors, higher-temperature or higher-burnup fuels, increased shipment frequency to support rapid deployment, and near-site transport for demonstration projects.

Response to Question#7–1: Provide feedback on the need for alternate dose rates for transportable microreactors, the technical basis for those alternate dose rates, and the safety implications for those alternative dose rates.

DEEP does not support establishing alternate transportation dose rate limits for transportable microreactors at this time.

The existing dose rate limits contained in 10 CFR Part 71 have been developed through decades of domestic and international experience and are harmonized with transportation standards established by the International Atomic Energy Agency (IAEA) and implemented in coordination with the U.S. Department of Transportation (DOT). These standards have proven effective in facilitating the safe transport of radioactive materials, including spent nuclear fuel, high-activity radioactive sources, and other radiological materials under a broad range of operating and accident conditions. DEEP is not aware of a sufficient technical basis demonstrating that these long-established limits are inadequate for microreactor transportation or that higher dose rates are necessary to enable deployment.

DEEP is concerned that increasing allowable transportation dose rates would create unintended consequences for transportation workers, emergency responders, law enforcement personnel, and members of the public. While transportation package evaluations often focus on radiological safety during routine transport and accident conditions, higher external dose rates would also create challenges during foreseeable transportation disruptions, including traffic accidents unrelated to the reactor shipment, roadway closures, vehicle breakdowns, severe weather events, construction delays, security events, and extended staging periods. In such circumstances, members of the public and transportation personnel may remain in proximity to a shipment for periods significantly longer than originally anticipated.

DEEP further notes that higher transportation dose rates would complicate emergency response operations. Emergency responders arriving at a transportation incident must rapidly assess hazards, establish protective actions, manage traffic control, and protect both responders and the public. Maintaining the existing transportation dose rate framework provides a consistent basis for planning, training, instrumentation selection, and emergency response decision-making.

Introducing higher allowable dose rates for a subset of reactor shipments would increase complexity and create additional challenges for state and local response organizations.

DEEP also believes that increasing transportation dose rate limits could undermine public confidence in the safety of advanced reactor deployment. The existing limits reflect a well-established and internationally recognized safety framework. Altering these limits specifically to accommodate particular reactor designs may be perceived as weakening safety standards rather than advancing innovation.

If transportable microreactor developers encounter challenges meeting existing transportation requirements, DEEP believes the preferred solution is to improve reactor and package design rather than relax established radiological protection standards. This may include enhanced shielding, alternative packaging configurations, fuel design improvements, operational controls, or other engineering measures that enable compliance with existing transportation requirements. The transportation of spent nuclear fuel and other highly radioactive materials has demonstrated that robust package design can successfully meet current dose rate limits while maintaining high levels of safety.

Accordingly, DEEP recommends that the NRC retain the existing transportation dose rate limits contained in 10 CFR Part 71. Maintaining consistency with established domestic and international standards will preserve a proven radiological protection framework, support effective emergency preparedness and response, maintain public confidence, and encourage reactor developers to incorporate transportation considerations into the design process through reliance on longstanding safety requirements.

Response to Question#7–2: Are there cost-benefit considerations beyond the costs and benefits associated with rulemaking (e.g., the costs of additional shielding due to lower dose rates) that the NRC should consider with respect to alternate dose rates for transportable microreactors? Please provide a basis for your response.

Yes. DEEP believes that the NRC should evaluate a broader range of societal, governmental, and emergency preparedness costs when considering whether alternate transportation dose rates for transportable microreactors are warranted. While applicants may identify potential cost savings associated with reduced shielding requirements, increased payload capacity, or simplified transportation package design, those savings may be offset by significant costs imposed on states, local governments, emergency response organizations, transportation agencies, and the public.

First, higher transportation dose rates may require additional training and preparedness activities for state and local emergency responders. Emergency response personnel rely on established transportation assumptions when developing response procedures, selecting instrumentation, conducting exercises, and training personnel. If alternate dose rates are authorized for certain reactor shipments, states and local jurisdictions may need to revise plans, update procedures, develop specialized training, and conduct additional exercises to ensure responders can safely

manage transportation incidents involving these shipments. These costs would largely be borne by state and local governments rather than the licensee.

Second, the NRC should consider potential increases in security and law enforcement costs. Depending on the radiological characteristics of the shipment, higher external dose rates may increase the need for coordination with local, state, Tribal, and federal law enforcement agencies. Additional law enforcement escorts, traffic control measures, route monitoring, and protective actions may be necessary during transport. These requirements would place additional demands on local law enforcement agencies (LLEA) resources, particularly in jurisdictions with limited staffing and specialized radiological response capabilities.

Third, DEEP recommends that the NRC consider costs associated with state review and transportation oversight. States often review transportation routes, participate in shipment planning, coordinate emergency preparedness activities, evaluate impacts on critical infrastructure, and assess routing considerations. Shipments with higher dose rates may require additional technical review, coordination, and oversight activities that would increase administrative and regulatory costs for state agencies.

DEEP also notes that transportation incidents involving large transportable microreactors would have substantial indirect economic impacts that may not be fully reflected in traditional transportation package analyses. In the event of a transportation accident, even one that does not result in a radiological release, precautionary measures may require extended roadway closures, traffic diversions, detours, and emergency response operations. If such an incident occurs on a major interstate highway, freight corridor, port access route, rail corridor, or other critical transportation infrastructure, the resulting disruptions would impose significant economic costs on surrounding communities, businesses, and transportation networks. These impacts may be amplified if higher radiation fields necessitate larger exclusion zones, more restrictive access controls, or longer responder staging distances.

Finally, DEEP believes the NRC should consider the potential cost associated with public perception and confidence. Transportation of nuclear materials already receives significant public attention. Establishing alternate dose rate standards for transportable microreactors would create public concern that established transportation safety standards which protect public safety are being relaxed to accommodate new technologies. Addressing these concerns may require additional public outreach, stakeholder engagement, and risk communication efforts by federal, state, and local agencies.

For these reasons, DEEP recommends that any cost-benefit evaluation consider not only potential cost savings realized by reactor developers and transportation package designers, but also the broader costs that may be imposed on emergency responders, LLEAs, state regulators, transportation infrastructure operators, and the public. A comprehensive evaluation should ensure that cost reductions achieved through relaxed transportation dose rate requirements do not simply shift costs and burdens to other stakeholders while long-established internationally recognized margins of safety.

Response to Question#7-3: Provide feedback on the impact to international and interstate shipments if there were alternate transportation package dose rate limits for transportable microreactors.

DEEP believes that establishing alternate transportation package dose rate limits for transportable microreactors would create significant challenges for both interstate and international shipments and would complicate existing transportation oversight frameworks that have been developed around current NRC, DOT, and IAEA standards.

Many states maintain statutory and regulatory programs governing the transportation of radioactive materials that rely upon existing federal transportation classifications, package requirements, and radiological protection assumptions. For example, Connecticut regulates certain radioactive material shipments through a permit program administered by the Connecticut Department of Transportation pursuant to Connecticut General Statutes § 16a-106. Under this framework, shipments of specified radioactive materials and radioactive waste require advance permitting, routing review, coordination with state agencies, and, where necessary, the imposition of conditions such as escort requirements, route modifications, timing restrictions, and inspection activities to protect public health and safety.

The Connecticut permitting process requires consideration of shipment characteristics, transportation routes, population centers, emergency response capabilities, and other public safety factors. If alternate dose rate limits were established for transportable microreactors, states may determine that additional review, permitting conditions, routing restrictions, or escort requirements are warranted. Such actions would increase transportation costs, extend shipment schedules, and create inconsistencies among jurisdictions.

DEEP notes that Connecticut is not unique in this regard. Other states maintain transportation permitting programs, emergency management requirements, law enforcement coordination procedures, or routing authorities that would be affected by higher transportation dose rates. States with densely populated urban areas, major transportation hubs, critical infrastructure corridors, or unique geographic constraints would be particularly sensitive to shipments involving elevated radiation fields. As a result, states could impose additional conditions regarding allowable routes, transit times, staging locations, law enforcement escorts, notifications, inspections, or emergency preparedness measures.

The establishment of alternate transportation dose rate limits would also complicate interstate transportation planning. A shipment originating in one state may transit multiple jurisdictions, each with different transportation authorities, emergency response capabilities, and risk tolerances. If states determine that alternate dose rate shipments warrant additional oversight, route approvals and transportation logistics would become more complex and less predictable. This would result in increased administrative burden for both shippers and regulators.

International shipments would face similar challenges. Current transportation standards benefit from substantial international harmonization through IAEA transportation regulations. Maintaining consistency among NRC, DOT, and international requirements facilitates cross-

border movement of radioactive materials and supports a common understanding of package performance and radiological protection expectations. Divergence from these established standards would create uncertainty regarding package acceptance, regulatory approvals, and transportation planning in jurisdictions that continue to rely upon existing IAEA dose rate limits.

DEEP therefore recommends that the NRC carefully evaluate the broader transportation implications of any alternate dose rate framework, including potential impacts on state permitting programs, interstate transportation logistics, emergency preparedness requirements, law enforcement coordination, and international regulatory harmonization. While alternate dose rates may offer potential benefits to certain reactor developers, those benefits should be weighed against the possibility of increased transportation complexity, additional state-imposed restrictions, and reduced consistency across domestic and international transportation systems.

For these reasons, DEEP believes that maintaining alignment with existing NRC, DOT, and IAEA transportation dose rate standards remains the most practical approach for ensuring efficient interstate and international transport while preserving a well-established and widely accepted framework for public and worker protection.

Response to Question#7–4: What assumptions should the NRC use when estimating the number of shipments, exposure scenarios, and expected dose rates for fresh and irradiated transportable microreactors? Please provide a basis for your response.

DEEP recognizes that estimating future transportation activity for transportable microreactors presents significant uncertainty. At present, there is limited operational experience with commercial transportable microreactor deployment, and key variables—including reactor design, fuel type, fuel enrichment, deployment model, operating cycle length, refurbishment practices, transportation mode, and ultimate disposition pathways—remain highly uncertain. As a result, any assumptions regarding shipment frequency, exposure scenarios, or transportation dose rates may be highly speculative.

DEEP therefore recommends that the NRC exercise caution when developing assumptions for cost-benefit analyses related to transportation dose rates. Small changes in assumed deployment rates, shipment frequencies, transit distances, population densities, transportation routes, or operational practices would significantly alter the results of the analysis and may be used to support widely different conclusions regarding the benefits or necessity of alternative dose rate limits.

Importantly, the current transportation framework established under 10 CFR Part 71 and coordinated with DOT and IAEA requirements is designed to ensure the safe transport of radioactive materials regardless of shipment volume. Whether the future transportation system supports dozens, hundreds, or thousands of shipments, the existing dose rate limits provide a proven and well-understood level of protection for transportation workers, emergency responders, and members of the public. Consequently, DEEP does not believe that uncertainty regarding future shipment numbers alone provides a sufficient basis for modifying established transportation dose rate standards.

Given the limited information currently available, DEEP recommends that the NRC use conservative assumptions and evaluate a broad range of transportation scenarios, including:

- Initial deployment of fresh-fueled microreactors;
- Return shipments of irradiated reactors or irradiated fuel;
- Refurbishment and redeployment cycles;
- Extended transportation delays resulting from traffic incidents, weather events, or equipment failures;
- Shipments through densely populated urban areas and major transportation corridors; and
- Transportation accidents requiring extended emergency response operations.

DEEP also notes that some impacts are difficult to quantify using traditional cost-benefit methodologies. Public confidence and acceptance are important factors in the deployment of advanced reactor technologies, yet these considerations are inherently challenging to express in monetary terms. Public perception of transportation safety may be influenced by changes to long-standing transportation standards, even where technical analyses suggest limited radiological impact. Similarly, state and local government concerns regarding emergency preparedness, routing decisions, and transportation oversight may not be fully captured through conventional quantitative analyses.

Accordingly, DEEP recommends that the NRC maintain the existing transportation dose rate limits unless and until sufficient operational experience and transportation data become available to support robust, defensible assumptions regarding shipment frequency, transportation pathways, exposure scenarios, and public impacts. Until such information exists, the existing transportation standards provide a well-established and internationally harmonized framework that ensures protection of workers, emergency responders, and the public regardless of the number of future microreactor shipments.

8. Fitness For Duty for Proposed Part 57. The proposed rule would allow a licensee or other entity to implement an FFD program of its own specification if operator action would not be required to maintain the reactor within the criterion of proposed § 57.25(a) or a credible operator or maintenance error could not result in exceeding that criterion.

Response to Question#8–1: To support licensees developing an FFD program tailored to their own specifications, what core elements (such as program policy and governance; program scope and applicability; behavioral observation; specimen collection and testing; substances tested; pre-employment screening; for-cause and post-event measures; periodic medical fitness evaluations for licensed reactor operators; program-related training; program audits and corrective actions; and supportive resources, such as an employee assistance program or other equivalent substance abuse counseling) should the NRC include in its program requirements or guidance to help licensees ensure the trustworthiness, reliability, and fitness of personnel and to support FFD program consistency within the industry? Please provide a basis for your response.

DEEP supports the NRC's performance-based approach of allowing licensees flexibility to develop Fitness-for-Duty (FFD) programs tailored to the specific risks and operational characteristics of their facilities. However, DEEP believes that certain foundational elements are essential to ensuring consistency across the industry, worker safety, public safety, and maintaining public confidence in the safe operation of 10 CFR Part 57 facilities.

At a minimum, DEEP recommends that NRC regulations and/or guidance include expectations for the following program elements:

- Program policy, governance, and management oversight;
- Program scope and applicability, including identification of personnel subject to FFD requirements;
- Behavioral observation programs;
- Specimen collection and testing protocols;
- Identification of substances subject to testing;
- Pre-employment and pre-access screening;
- For-cause, reasonable suspicion, and post-event testing requirements;
- Periodic medical fitness evaluations for licensed operators and other safety-significant personnel;
- Initial and recurrent FFD training;
- Program audits, performance assessments, and corrective action processes; and
- Supportive resources, including employee assistance programs or equivalent substance abuse counseling and rehabilitation services.

While these programmatic elements are important, DEEP believes that the most critical objective of any FFD program is ensuring the protection of public health, safety, security, and the environment. Consistent with the NRC's performance-based regulatory framework, the effectiveness of an FFD program should ultimately be measured by its ability to prevent impaired personnel from performing duties that would adversely affect safe operations, security functions, maintenance activities, or radiological protection programs.

Accordingly, DEEP recommends that the NRC establish explicit requirements for post-event fitness-for-duty evaluations and testing. Specifically, any operational, maintenance, design, radiological protection, or security event that results in:

- A release of radioactive material exceeding normal operational limits;
- A failure or degradation of equipment important to safety;
- A significant security event or security system failure;
- A substantial operational error with potential safety significance; or
- Any other event reportable to the NRC due to its safety significance,

should trigger a rigorous post-event fitness-for-duty assessment of involved personnel. Such assessments should be conducted using NRC-defined testing standards, specimen collection protocols, chain-of-custody requirements, and laboratory quality assurance requirements to ensure consistency and defensibility of results across the industry.

DEEP further believes that post-event testing serves an important performance indicator for evaluating the effectiveness of a licensee's FFD program. If an individual involved in a significant event is subsequently determined to be impaired or otherwise unfit for duty and the licensee's FFD program failed to identify the condition through its routine processes, this should be considered evidence warranting NRC review of the adequacy and effectiveness of the FFD program. Such findings from the NRC may reveal weaknesses in behavioral observation programs, testing frequencies, supervisory oversight, training, or program implementation.

In addition, DEEP recommends that the NRC consider periodic challenge testing or other oversight mechanisms that benchmark licensee-specific programs against established NRC fitness-for-duty standards. Such evaluations could be conducted on a random or periodic basis and would provide an objective means of assessing whether alternative FFD programs are achieving outcomes comparable to those expected under more prescriptive NRC requirements.

DEEP believes that combining performance-based flexibility with clearly defined post-event testing requirements and periodic program validation would allow licensees to tailor FFD programs to their facilities while ensuring that all programs maintain a consistent level of effectiveness in protecting public health and safety. This approach would also provide the NRC with objective measures for evaluating program performance and identifying areas requiring corrective action.

Response to Question#8–2: What approach or methodology should be used to determine whether a credible operator or maintenance error could result in exceeding the dose-based entry criterion specified in proposed § 57.25(a)? Please provide a basis for your response.

DEEP recommends that the NRC adopt a risk-informed, performance-based methodology that evaluates whether operator or maintenance errors would adversely affect structures, systems, and components whose performance is relied upon to satisfy the dose-based entry criterion in proposed 10 CFR § 57.25(a).

At a minimum, the evaluation should consider any operational activity, maintenance activity, surveillance activity, testing activity, or configuration change involving equipment that is identified in the facility's licensing basis as important to safety, safety-significant, risk-significant, or otherwise credited for maintaining radiological consequences below the applicable dose criterion. The analysis should consider both direct and indirect human actions that would degrade the performance of these systems.

DEEP believes that the assessment should not be limited solely to actions involving active safety systems or reactor controls. Particular attention should also be given to activities that would adversely affect inherent or passive safety features that are credited in the facility's safety case. Many advanced reactor and microreactor designs rely heavily on passive safety systems and inherent safety characteristics to prevent or mitigate accidents. As a result, maintenance errors, configuration control errors, housekeeping deficiencies, or improper modifications that degrade these features may be as important as traditional operator errors.

For example, a maintenance worker who leaves tools, debris, insulation material, temporary scaffolding, protective coverings, or other foreign material within the flow path of a passive air-cooling system would impair the system's ability to perform its intended safety function. Similarly, activities that obstruct ventilation pathways, alter heat transfer characteristics, disable passive valves, compromise natural circulation pathways, or otherwise degrade passive safety performance should be considered credible maintenance errors if they could contribute to exceeding the dose-based criterion.

DEEP further recommends that the evaluation include any operational activities that directly affect reactor power, reactivity control, decay heat removal, confinement functions, radiation protection systems, safety-related instrumentation, or other safety functions identified in the plant's licensing basis. Operator actions that could challenge these functions through incorrect manipulation, misinterpretation of indications, procedural errors, failure to respond appropriately to abnormal conditions, or configuration control failures should be evaluated as part of the determination.

The methodology should also consider latent maintenance errors and organizational factors that may not become apparent until long after the work is completed. Examples include improper calibration, incorrect component installation, failure to restore equipment following maintenance, inadequate procedure implementation, or deficiencies in work planning and verification. These types of errors have historically contributed to significant events across multiple industries and should be considered when evaluating whether human performance can affect compliance with the dose-based criterion.

DEEP believes that the most practical approach is to utilize existing safety analyses, probabilistic risk assessments (where available), hazard analyses, failure modes and effects analyses, maintenance rule evaluations, and licensing-basis accident analyses to identify those systems, components, and activities whose degradation could contribute to exceeding the 10 CFR § 57.25(a) criterion. Personnel performing activities affecting those functions should be considered within the scope of a fitness-for-duty program regardless of whether they are licensed operators, maintenance personnel, contractors, supervisors, or other individuals whose actions could influence safety-significant equipment performance.

Overall, DEEP recommends that the determination focus not simply on whether an individual directly controls reactor operations, but whether such individual's actions could reasonably impair any system, component, or function relied upon to maintain radiological consequences below the dose-based entry criterion. Such an approach is consistent with the NRC's risk-informed and performance-based regulatory framework and reflects the increasing reliance of advanced reactor designs on passive and inherent safety features.

Response to Question#8–3: What alternative criteria could be applied to proposed § 26.3(f)(3) to determine whether a licensee should be permitted to implement an FFD program of its own specification or be required to implement either the requirements of

part 26 except subparts K and P or the program described in proposed subpart P of part 26? Please provide a basis for your response.

DEEP does not currently recommend establishing additional or alternative criteria beyond those proposed in 10 CFR § 26.3(f)(3).

The proposed approach already provides substantial flexibility by allowing licensees to implement a FFD program tailored to their facility where operator actions are not required to maintain the reactor within the dose-based criterion and where credible operator or maintenance errors cannot result in exceeding that criterion. DEEP believes this framework is consistent with the NRC's risk-informed and performance-based regulatory philosophy and provides an appropriate basis for differentiating facilities that may warrant varying levels of FFD program requirements.

DEEP is concerned that introducing additional risk-based or consequence-based screening criteria at this stage would introduce significant subjectivity into the regulatory process. Many advanced reactor and microreactor technologies remain in various stages of development, and there is currently limited operational experience from which to evaluate the full range of potential human performance challenges, maintenance issues, operational errors, latent failures, and organizational factors that could contribute to accidents or safety-significant events.

In particular, no commercial advanced reactor has yet accumulated sufficient operating experience to fully validate assumptions regarding operator workload, maintenance-induced failures, human-system interfaces, long-term equipment reliability, passive safety system performance, or the effectiveness of novel operational concepts. As a result, attempts to develop additional criteria based on detailed risk insights or operational experience would rely heavily on assumptions that have not yet been demonstrated in practice.

DEEP further notes that introducing additional criteria would lead to inconsistent implementation and regulatory uncertainty. Different applicants may use varying methodologies, assumptions, and analytical approaches to support eligibility for alternative FFD programs, potentially resulting in inconsistent outcomes for facilities with similar risk profiles. The current criterion provides a clear and understandable threshold focused on the potential for operator or maintenance actions to affect compliance with the applicable dose criterion.

Accordingly, DEEP believes the NRC should retain the proposed criteria as written and allow operational experience to inform future refinements. As advanced reactors are licensed, constructed, operated, and inspected, the NRC and stakeholders will gain a better understanding of the relationship between human performance, facility design, passive safety features, operational practices, and overall risk. At that time, the NRC could evaluate whether additional criteria, alternative methodologies, or more refined performance measures are warranted.

Until such experience is available, DEEP believes the proposed framework provides an appropriate balance between regulatory flexibility and protection of public health and safety. Maintaining a clear and relatively objective criterion will support consistent implementation

while avoiding the uncertainty and subjectivity that would result from introducing additional risk-based determinations that cannot yet be adequately validated through operating experience.

9. Establishing Schedules for Part 57 Applications in the NRC's Contested Hearing Process. In response to the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024 and E.O. 14300, section 5(j), the NRC has published a proposed rule to streamline the NRC's contested hearing process for licensing proceedings (91 FR 10450; March 3, 2026). As part of that proposed rule, the NRC proposes to different types of applications, including special requirements for highly expedited proceedings to ensure that they are completed more promptly than they otherwise would be to support expedited NRC decision-making on the underlying applications. These special requirements include shorter filing periods (e.g., for hearing requests, answers to hearing requests, new or amended contention, and motions) and shorter deadlines for the completion of evidentiary hearings. The NRC proposes to establish a new term, "highly expedited proceeding," in § 2.4, "Definitions," to define which proceedings are subject to these special requirements. The rationale and detailed provisions for this proposal are described in the proposed rule to streamline the NRC's contested hearing process for licensing proceedings.

Response to Question#9–1: Consistent with the objectives of this proposed rule to support high-volume licensing of microreactors and other reactors with comparable risk profiles, should the NRC include certain proposed part 57 applications within the definition of "highly expedited proceeding" if the NRC issues a final rule modifying the NRC's contested hearing process with special requirements for highly expedited proceedings? Specifically, when a proposed part 57 application references an NRC approval providing finality on the design in the adjudicatory proceeding, the scope of issues for adjudication would be narrow, supporting an even more expedited schedule for filings and decisions. Licensee-initiated amendments to proposed part 57 licenses should be similarly narrow. Therefore, should the NRC include these types of proposed part 57 applications within the § 2.4 definition of "highly expedited proceeding" and thereby apply requirements for highly expedited proceedings to these applications? If these applications were to be included within the scope of highly expedited proceedings, should the NRC include the following definition of "highly expedited proceeding" in § 2.4 (underlined and strikeout text shows potential changes to the definition of this term in the proposed rule to streamline the NRC's contested hearing process):

Highly expedited proceeding means a proceeding for (a) the grant of a license under 10 CFR part 57 where the application references a design certification, a manufacturing license, or a construction permit or operating license with generic finality; (b) a licensee-initiated amendment to a license under 10 CFR part 57; (ac) a licensee-initiated amendment for a measurement uncertainty recapture uprate; (bd) a licensee-initiated amendment relying on an NRC-approved Technical Specifications Task Force traveler using the Consolidated Line-Item Improvement Process; or (ee) any other proceeding that the Commission designates as a highly expedited proceeding.

DEEP supports the NRC's efforts to establish efficient and predictable licensing processes for advanced reactors and agrees that certain 10 CFR Part 57 applications may be appropriate candidates for highly expedited proceedings where the scope of issues available for adjudication is demonstrably limited.

In particular, DEEP believes that applications relying upon previously approved NRC design certifications, manufacturing licenses, construction permits, operating licenses with generic finality provisions, or similarly established approvals may warrant expedited treatment because many fundamental design, safety, security, and environmental issues would have already been resolved through prior NRC review and adjudication processes. Likewise, certain narrowly scoped licensee-initiated amendments may be suitable for expedited proceedings where the proposed changes are limited in scope or administrative in nature and do not raise significant new safety, environmental, security, or policy issues.

However, DEEP believes that eligibility 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 confidence are maintained for decisions involving potentially significant safety, environmental, or policy considerations.

DEEP also recommends that the NRC exercise caution in expanding the use of highly expedited proceedings beyond circumstances where the scope of potential adjudicatory issues is genuinely narrow and well-defined. The mere desire for accelerated deployment should not, by itself, justify abbreviated hearing schedules or reduced opportunities for meaningful participation by affected stakeholders, governmental entities, or members of the public.

Highly expedited proceedings should not become a mechanism to compensate for inadequate planning, incomplete applications, or avoidable licensing delays attributable to applicants.

Applicants seeking the benefits of expedited review should be expected to submit complete, high-quality applications supported by sufficient technical information to allow efficient NRC review. Where significant information gaps, unresolved technical issues, substantial design changes, or novel policy questions remain, the NRC should retain discretion to utilize standard adjudicatory schedules rather than highly expedited procedures.

Accordingly, DEEP supports including certain 10 CFR Part 57 applications within the definition of "highly expedited proceeding" where the application relies upon prior NRC approvals providing finality and where the remaining scope of adjudication is demonstrably limited. However, DEEP recommends that the NRC apply such procedures narrowly and maintain sufficient flexibility to determine, on a case-by-case basis, whether the nature and complexity of the issues presented justify expedited treatment.

This approach would preserve the efficiency benefits intended by the ADVANCE Act and Executive Order 14300 while ensuring that expedited proceedings remain reserved for applications with genuinely limited adjudicatory scope rather than serving as a substitute for thorough applicant preparation or comprehensive NRC review.

Response to Question#9-2: What hearing schedule requirements should apply to proposed part 57 joint applications for construction permits and operating licenses that would not be included within the proposed definition of “highly expedited proceeding”? Under the proposed rule to streamline the NRC’s contested hearing process, 10 CFR part 50 or 52 applications for new reactor licenses with no design finality in the adjudicatory proceeding would be subject to the longest hearing schedules because these are considered to be the most complex applications. However, proposed part 57 is limited to smaller reactors with less complex designs and operational characteristics and low potential radiological consequences, which should limit the potential complexity of the license application. Also, proposed part 57 is intended to support more expedited reviews. Therefore, should the NRC treat proposed part 57 applications that are not within the proposed definition of “highly expedited proceeding” in accordance with the proposed hearing schedules that would apply to most types of license applications, such as 10 CFR part 54 license renewals, rather than the longer hearing schedules reserved for the most complex applications? Please provide a basis for your response.

DEEP does not support applying abbreviated hearing schedules to 10 CFR Part 57 joint construction permit and operating license applications that do not qualify as "highly expedited proceedings" under the proposed definition.

While DEEP recognizes that 10 CFR Part 57 reactors are intended to have smaller source terms, less complex designs, and lower potential radiological consequences than traditional large light-water reactors, the hearing process serves purposes beyond simply evaluating accident consequences. The NRC's adjudicatory process provides an important mechanism for public participation, state and Tribal engagement, and independent review of issues that may be unique to a particular application, site, or deployment scenario. Where an application does not qualify

for highly expedited treatment, DEEP believes the NRC should preserve sufficient time for meaningful participation by interested stakeholders.

DEEP is particularly concerned that the proposed 10 CFR Part 57 framework relies heavily on design approvals and other licensing actions that may establish regulatory finality for issues that cannot be revisited during subsequent deployment-specific proceedings. As a result, early licensing proceedings may represent one of the few opportunities for states, local governments, Tribal governments, public interest organizations, and members of the public to raise concerns regarding design features, operational assumptions, safety analyses, or other matters that could affect future deployments. Shortening hearing schedules would limit the ability of these stakeholders to participate effectively in proceedings that establish precedents applicable to potentially numerous future facilities.

DEEP also notes that although the potential consequences of individual 10 CFR Part 57 facilities may be comparatively low based on current limited analyses, the NRC is developing this framework specifically to support broader deployment of advanced reactors and microreactors. The cumulative impacts of a potentially large numbers of facilities being deployed across diverse geographic locations, communities, and operational settings warrant careful consideration. Establishing public confidence in this emerging regulatory framework will require transparent processes that provide adequate opportunities for public and Tribal stakeholder engagement and review.

Furthermore, many state agencies and local governments operate with limited staff and resources and would require additional time to evaluate technical information, coordinate across agencies, engage subject matter experts, and develop informed positions on licensing matters. Hearing schedules that are too compressed would disproportionately disadvantage these stakeholders and reduce the effectiveness of their participation.

Accordingly, DEEP recommends that 10 CFR Part 57 applications not meeting the definition of a highly expedited proceeding be subject, at a minimum, to the standard hearing schedules proposed for most NRC licensing actions rather than the shortened schedules intended for highly expedited proceedings. While the NRC may reasonably conclude that such applications do not require the longest schedules reserved for the most complex 10 CFR Parts 50 or 52 proceedings, DEEP believes sufficient time must be maintained to ensure meaningful public participation, state involvement, Tribal engagement, and thorough consideration of issues that may have implications for future deployments.

Maintaining a standard adjudicatory schedule for these applications will help promote transparency, public confidence, and regulatory legitimacy while still providing a more efficient process than that used for large, first-of-a-kind reactor licensing proceedings. This balanced approach is consistent with the NRC's objective of facilitating advanced reactor deployment while ensuring that affected stakeholders retain meaningful opportunities to participate in the licensing process.

10. Remote Operations and Autonomous Operations. Proposed part 57 would allow remote operations and autonomous operations, which is expected to be a paradigm shift for the nuclear industry and the NRC.

Response to Question#10–1: Should the NRC allow remote operations and autonomous operations of nuclear power plants that demonstrate low consequences? What, if any, additional requirements and guidance are necessary for the regulatory review of remote operation and autonomous operation as part of the rapid licensing envisioned under part 57? Please provide a basis for your response.

DEEP supports allowing remote operation of 10 CFR Part 57 facilities where the applicant can demonstrate that the reactor design satisfies the applicable dose-based criteria and that public health, safety, security, and environmental protection are maintained. Given the anticipated deployment models for microreactors and other low-consequence reactor technologies, remote operation may not only be feasible but may provide advantages by allowing continuous monitoring, oversight, and support from centralized facilities staffed by highly trained personnel. Remote operation may also facilitate operational flexibility, including load-following and power adjustments necessary to support integration with modern electrical systems.

However, DEEP believes 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 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. In such a scenario, the aggregate consequences would be substantially greater than those associated with any individual reactor and could challenge assumptions underlying the low-consequence basis of the 10 CFR Part 57 framework. DEEP also notes that modern cyber threats may extend beyond unauthorized access or system disruption. Sophisticated attacks could potentially manipulate information presented to remote operators, creating false indications of plant status while masking actual conditions. When coupled with fleet-wide deployment of common digital systems, such vulnerabilities could affect multiple facilities simultaneously, resulting in aggregate consequences that exceed those considered for individual reactors. Accordingly, cybersecurity evaluations for remote and autonomous operations should consider both single-facility and multi-facility common-cause cyber scenarios. DEEP therefore believes that the NRC should consider not only the consequences of a cyber event at a single facility, but also the potential for common-cause cyber vulnerabilities, coordinated attacks, or software-related failures that could affect multiple reactors concurrently.

At a minimum, DEEP recommends that no remote operator, autonomous control system, or automated process be permitted to override established safety limits, protective actions, or engineered safety functions credited in the facility's licensing basis. Reactor protection functions, safety-related actuation functions, and other actions necessary to maintain compliance with the

safety analysis should remain governed by automatic protective systems designed to place the reactor in a safe condition without reliance on remote intervention.

DEEP further recommends that any functions affecting reactor power, reactivity control, heat removal, radioactive effluent releases, radiation protection systems, security systems, or other licensing-basis safety functions be subject to predefined operational limits that cannot be bypassed through remote commands. Where operating parameters approach established limits, the reactor should automatically initiate appropriate protective actions, including power reductions, operational restrictions, or shutdown actions as necessary. Such actions should occur automatically based on approved plant logic and should not depend upon remote operator actions.

For facilities utilizing remote operations, the NRC should also require robust communication reliability provisions. In the event that communications between the reactor and the remote operations center are interrupted, degraded, or lost, the reactor should automatically transition to a predefined safe condition consistent with its licensing basis. Safe-state actions should occur without requiring operator intervention and should ensure continued protection of public health and safety regardless of the duration of the communication outage.

DEEP further recommends that the NRC establish requirements addressing the loss of remote operational capability for facilities relying on remote operations. Specifically, applicants should be required to identify and justify the maximum period during which the reactor can safely remain in its predefined safe condition following a loss of communications, loss of the remote operations center, or other event that prevents remote operator intervention. As part of the licensing review, the applicant should demonstrate that the reactor design, including its passive and active safety features, can safely cope with such conditions for the duration necessary to restore communications or dispatch qualified personnel to the site.

Applicants should also identify the qualifications, training, and availability of personnel who would be dispatched to assume local operational control if remote control capabilities are lost. The NRC should require licensees to demonstrate that appropriately qualified personnel can reasonably reach the facility within a defined timeframe and that the reactor can remain in a safe condition throughout that period without reliance on operator actions. Consideration should be given to transportation disruptions, severe weather, natural disasters, security events, and other conditions that could delay personnel access to the site.

In addition, DEEP believes that all remotely operated reactor designs should retain the capability for local control and local shutdown. Regardless of the degree of automation or reliance on remote operations, qualified personnel should be able to place the reactor in a safe condition from the site itself if necessary. Applicants should therefore identify the staffing model, personnel qualifications, and expected response times associated with local intervention and demonstrate that appropriately trained personnel can reach the facility and perform any required shutdown or recovery actions within a timeframe consistent with the assumptions of the safety analysis.

These requirements would provide an important layer of defense-in-depth by ensuring that remote operations do not create a single point of vulnerability associated with communications systems or centralized operational facilities. They would also provide greater confidence that reactor safety can be maintained under a broad range of abnormal conditions, including those that simultaneously affect communications infrastructure and transportation networks.

DEEP also believes that remote and autonomous reactor operations warrant heightened cybersecurity requirements and regulatory scrutiny. Because remote operations inherently rely on digital communications, control systems, software, and network infrastructure, the consequences of a successful cyber-attack may be substantially different than for traditional facilities where operators are continuously present on site. Accordingly, applicants proposing remote or autonomous operations should be required to demonstrate robust cybersecurity protections designed to prevent unauthorized access, manipulation, degradation, or denial of critical operational, safety, and security functions.

At a minimum, the NRC should require defense-in-depth cybersecurity architectures, secure communication pathways, strong authentication controls, network segmentation, continuous monitoring, incident detection capabilities, and provisions for rapid recovery from cyber incidents. Particular attention should be given to interfaces between operational technology systems, reactor control systems, security systems, remote operations centers, cloud-based services, and any third-party communication networks. Applicants should demonstrate that cyber vulnerabilities cannot compromise safety functions, disable protective systems, alter reactor operating parameters outside approved limits, interfere with emergency response capabilities, or prevent the reactor from achieving and maintaining a safe condition.

In addition to preventing unauthorized access and control, applicants should demonstrate resilience against sophisticated cyber-attacks designed to manipulate operator awareness and decision-making. Such attacks may include falsification of sensor data, manipulation of alarms, suppression of fault indications, or creation of deceptive human-machine interface displays that present operators with inaccurate information regarding actual plant conditions. Of particular concern are scenarios in which a cyber adversary compromises monitoring or control systems in a manner that causes remote operators to believe that the reactor is operating normally while actual plant conditions differ significantly from those being displayed. Because remote operations inherently depend on digital information and situational awareness, the NRC should require applicants to demonstrate that critical safety decisions are not dependent upon a single data stream, display system, communication pathway, or monitoring architecture that could be compromised through a cyber-attack.

DEEP further recommends that applicants demonstrate the ability to safely respond to cyber events that disrupt, impair, compromise, or call into question the integrity of remote operational capabilities. In the event of a suspected or confirmed cyber-attack affecting communications, command-and-control systems, remote operator access, or the reliability of operational data being presented to operators, the reactor should automatically transition to and maintain a predefined safe condition without reliance on operator action. Additionally, the facility should retain the capability for appropriately qualified personnel to independently verify plant status and

assume local control, including implementation of shutdown or recovery actions independent of the affected remote systems. Applicants should demonstrate that cyber-attacks involving false data injection, operator deception, or manipulation of monitoring displays cannot prevent operators from recognizing abnormal conditions and placing the reactor in a safe configuration.

The NRC should specifically require applicants to demonstrate that local control functions cannot be disabled, overridden, or rendered unavailable by a cyber-attack affecting remote operational systems. In essence, local control should serve as a cyber-resilient backup capability that remains available even if remote command and communication systems are compromised. The ability to physically access the facility and safely assume local control provides an important defense-in-depth measure and helps ensure that no cyber event can leave the reactor in a condition where operators are unable to implement necessary protective actions.

Given the novelty of remote and autonomous operations in the nuclear industry, DEEP believes cybersecurity reviews for such facilities should receive particular regulatory attention during licensing and oversight activities. Cybersecurity should be treated as a foundational element of the safety case for remotely operated and autonomous reactors rather than solely as an operational program implemented after licensing.

DEEP also believes that autonomous operations warrant additional scrutiny beyond traditional remote operations. While the proposed rule addresses autonomous operation as a means of performing operational and safety functions without human intervention, the NRC should clearly define the scope of activities that may be performed autonomously and the performance criteria that must be met. Applicants should demonstrate that autonomous systems perform predictably under normal, off-normal, and accident conditions and that sufficient defense-in-depth exists to address software failures, sensor failures, communication failures, and unexpected operating conditions.

Finally, DEEP notes that the proposed rule does not appear to directly address the use of artificial intelligence (AI) technologies in reactor operations, autonomous control systems, operational decision-making, or security functions. Given the increasing interest in AI-enabled systems, DEEP believes the NRC should clearly establish regulatory requirements governing the use of AI in 10 CFR Part 57 facilities.

Particular caution is warranted where AI systems may influence reactor power levels, safety functions, radioactive material releases, emergency response actions, cybersecurity protections, or physical security functions. Unlike traditional deterministic control systems, many AI models operate through complex processes that may not be fully transparent or readily explainable to operators, regulators, or the public. The current state of knowledge regarding the long-term reliability, predictability, and verification of such systems remains evolving.

Accordingly, DEEP recommends that the NRC address the permissible use of AI technologies through regulation rather than solely through guidance documents. Establishing requirements through rulemaking would provide greater regulatory certainty, ensure transparency, and allow for meaningful public participation regarding the appropriate role of AI in the operation of

nuclear facilities. Given the potential significance of AI-enabled decision-making for reactor safety and security, DEEP believes these issues warrant the same level of public review and regulatory scrutiny afforded to other fundamental aspects of reactor design and operation.

Overall, DEEP supports the use of remote operations and, where appropriately justified, autonomous operations for low-consequence reactors. However, these capabilities should be implemented within a regulatory framework that preserves automatic safety protections, prevents override of licensing-basis safety limits, ensures safe response to communication failures, and establishes clear regulatory boundaries for the use of artificial intelligence in safety- and security-related applications.

11. Application of the Single Failure Criterion. Applicants are encouraged to balance their selected risk assessment methods between traditional deterministic approaches such as application of single failure criterion methodologies (see SECY-77-439) with risk-insights (see SRM-SECY-19-0036) as the most effective path forward to achieving rapid and streamlined licensing decisions. While the single failure criterion is a cornerstone of nuclear safety, the NRC recognizes that it is not sufficient by itself for ensuring reasonable assurance of adequate protection. Instead, it serves as just one analytical tool within a broader, multilayered framework, designed to achieve reliable shutdown, cooling, and accident mitigation of a facility. The Commission's "Policy Statement on the Regulation of Advanced Reactors" (73 FR 60612, October 14, 2008) includes expectations that advanced reactors will provide enhanced margins of safety and/or use simplified, inherent, passive, or other innovative means to accomplish their safety and security functions. The policy statement provides examples of design attributes that could assist in establishing the acceptability or licensability of a proposed advanced reactor design and explains that incorporating these attributes may promote more efficient and effective design reviews. However, some licensing problems continue to exist in specific interpretations and applications of the single failure criterion for advanced reactor designs. Some of these issues were described in SRM-SECY-19-0036, and the Commission directed the NRC staff to apply risk-informed principles when strict, prescriptive application of deterministic criteria such as the single failure criterion is unnecessary to provide for reasonable assurance of adequate protection of public health and safety.

Response to Question#11-1: To what extent should the proposed part 57 implementation guidance consider the single failure criterion as a desired attribute to enhance reliability and defense in depth, rather than as a limiting factor in determining whether reasonable assurance of adequate protection exists for advanced reactor designs with enhanced margins of safety and/or that use simplified, inherent, passive, or other innovative means to accomplish their safety and security functions? Please provide a basis for the response.

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.

The SFC has been a cornerstone of the safety philosophy underlying the existing U.S. nuclear reactor fleet and has contributed significantly to the industry's strong safety record. By requiring that safety functions be capable of being accomplished despite the failure of a single component, system, or active element, the SFC provides a straightforward and understandable demonstration of defense in depth. Importantly, the criterion focuses on the consequences of failures rather than relying solely on estimates of their likelihood.

DEEP recognizes that probabilistic risk assessment and other risk-informed methods provide important insights into plant behavior and can help identify vulnerabilities, optimize resources, and focus regulatory attention on the most risk-significant contributors. However, probabilistic approaches inherently combine estimates of both consequence and likelihood. In some cases, low estimated probabilities may mask failure scenarios that could result in significant consequences if they were to occur. Such "cliff-edge" events may appear acceptable in a probabilistic framework despite having outcomes that could challenge fundamental safety objectives. The SFC serves as an important complement to risk-informed approaches by ensuring that key safety functions remain capable of performing their intended role even when individual failures occur, regardless of estimated probability.

DEEP is also mindful that many advanced reactor designs proposed under 10 CFR Part 57 rely on novel technologies, materials, fuels, manufacturing methods, and operational concepts for which there is limited operating experience. At the same time, the NRC is considering regulatory approaches that provide greater flexibility in areas such as quality assurance, component qualification, and operational programs. While these approaches may be appropriate for low-consequence facilities, they also introduce additional uncertainty regarding component reliability and long-term performance. In the absence of substantial operational experience, probabilistic estimates of component failure rates and system reliability may be subject to considerable uncertainty. Under these circumstances, deterministic design principles such as the SFC provide an important safety backstop.

At the same time, DEEP does not believe that maintaining the SFC should unduly constrain the deployment of advanced reactors that rely on passive and inherent safety features. Historically, application of the SFC has focused primarily on active failures and has not generally required extensive consideration of passive component failures. Because many 10 CFR Part 57 designs are specifically intended to achieve safety through passive heat removal, inherent reactivity feedback mechanisms, simplified designs, and other features that reduce reliance on active equipment and operator actions, DEEP believes there is relatively low risk that continued application of the SFC would impose unreasonable design burdens on these technologies.

Indeed, the presence of strong passive and inherent safety features may make it easier for advanced reactor designs to demonstrate compliance with the underlying principles embodied by the SFC. Designs that can tolerate individual failures without challenging safety limits inherently

support the objectives of defense-in-depth and operational resilience that the criterion seeks to promote.

Accordingly, DEEP recommends that proposed 10 CFR Part 57 implementation guidance continue to treat the SFC as an important design objective and reliability foundation that contributes to defense-in-depth and regulatory confidence. While strict application of the SFC should not necessarily be the sole determinant of reasonable assurance of adequate protection, neither should it be viewed merely as a desirable attribute that may be readily set aside through probabilistic arguments. Rather, the NRC should continue to use the SFC as a foundational deterministic tool that complements risk-informed approaches, particularly during the early deployment of advanced reactor technologies where operational experience remains limited and uncertainties regarding component performance and reliability are still being resolved.

Response to Question#11–2: Are there criteria or methods that can be included in the proposed part 57 implementation guidance that provide balance between the use of deterministic methods such as the single failure criterion and applicant-derived risk information to provide for reasonable assurance of adequate protection of public health and safety? Please provide a basis for the response.

DEEP supports the use of risk-informed methods as a complement to, rather than a replacement for, deterministic safety principles such as the Single Failure Criterion (SFC). Consistent with the NRC's long-standing risk-informed regulatory framework, deterministic and probabilistic approaches should be viewed as complementary tools that provide different perspectives on reactor safety and collectively contribute to reasonable assurance of adequate protection.

As discussed in DEEP's response to Question #11-1, the SFC provides an important deterministic demonstration that safety functions can withstand individual failures regardless of their estimated probability. Risk-informed analyses, in contrast, provide insights into the likelihood of various failure scenarios and can help prioritize design, operational, and regulatory attention. Together, these approaches can provide a balanced framework for evaluating advanced reactor designs.

However, DEEP does not support eliminating or substantially relaxing the SFC in favor of applicant-derived risk information at this stage of advanced reactor deployment. The NRC is simultaneously considering significant changes across multiple areas of the regulatory framework, including increased reliance on passive and inherent safety features, alternative quality assurance programs, remote operations, autonomous operations, novel manufacturing techniques, and potentially artificial intelligence-enabled systems. Each of these changes introduces additional uncertainties regarding component reliability, human performance, operational behavior, and long-term system performance.

While each individual change may be justified on its own merits, DEEP is concerned about the cumulative uncertainty that may result when multiple departures from established regulatory approaches are implemented simultaneously. In particular, probabilistic analyses are only as reliable as the assumptions, failure data, and operational experience upon which they are based.

For many advanced reactor technologies, there is limited operating experience available to validate assumptions regarding component failure rates, degradation mechanisms, maintenance performance, software reliability, autonomous system behavior, and the effectiveness of alternative quality assurance programs.

Accordingly, DEEP recommends that 10 CFR Part 57 implementation guidance continue to utilize the SFC as a foundational design objective while allowing risk-informed methods to provide additional context regarding the significance of failures, the effectiveness of defense-in-depth measures, and the overall safety performance of the facility. Risk information may appropriately be used to prioritize regulatory focus, evaluate design alternatives, justify reductions in unnecessary conservatism, and identify areas where additional protections may be warranted. However, such analyses should enhance—not replace—the deterministic demonstration that key safety functions can tolerate individual failures.

DEEP further recommends that the NRC consider a graded approach in which greater flexibility from traditional deterministic criteria may be considered only after sufficient operational experience has been accumulated for a particular technology, design family, or operational concept. As operating experience is gained and reliability assumptions can be validated through actual performance data, the NRC may be better positioned to determine whether additional departures from traditional deterministic approaches are justified.

Until such experience exists, DEEP believes the most prudent course is to maintain the SFC as a fundamental element of the safety framework while using risk-informed methods to enhance, rather than supplant, deterministic safety evaluations. This approach preserves the benefits of innovation and regulatory flexibility while ensuring that multiple concurrent changes to reactor design, operational concepts, and quality assurance programs do not inadvertently erode the defense-in-depth principles that have contributed to the strong safety performance of the U.S. nuclear industry.

12. Alternatives considered in the Regulatory Analysis. The NRC invites comment on the alternatives considered and the rationale for establishing proposed part 57 rather than using other frameworks (i.e., part 50, part 52, or part 53).

Response to Question#12–1: Are the NRC’s conclusions—existing pathways designed for large or specialized facilities (e.g., part 52 with inspections, tests, analyses, and acceptance criteria (ITAAC) or part 50 requirements tailored to large LWRs) would impose unnecessary burden and extend review timelines for microreactors—accurate and sufficiently supported?

DEEP generally agrees with the NRC's conclusion that existing licensing pathways developed primarily for large commercial light-water reactors (LWR) may impose unnecessary regulatory burden and extended review timelines when applied to certain advanced reactors and microreactors with substantially lower potential radiological consequences. DEEP supports the NRC's efforts to develop a more scalable, risk-informed, and technology-inclusive regulatory framework that appropriately aligns regulatory requirements with the risks posed by the facility.

The existing 10 CFR Parts 50 and 52 frameworks were developed largely around large LWR technologies with significant source terms, complex active safety systems, large emergency planning considerations, and extensive construction and operational oversight requirements. Many advanced reactor and microreactor designs seek to achieve safety through simplified designs, passive safety features, inherent safety characteristics, smaller radionuclide inventories, and reduced potential offsite consequences. In these cases, application of requirements developed specifically for large commercial reactors may not always result in corresponding safety benefits commensurate with the associated regulatory burden.

Accordingly, DEEP supports the NRC's efforts to establish a licensing framework that is appropriately scaled to the risks and characteristics of low-consequence reactor technologies. A risk-informed and performance-based approach has the potential to improve regulatory efficiency, provide greater predictability for applicants, reduce unnecessary regulatory burden, and support innovation while maintaining adequate protection of public health and safety.

However, DEEP also believes it is important to recognize that many of the technologies envisioned for licensing under 10 Part 57 remain relatively unproven from a commercial operating perspective. Unlike the existing LWR fleet, which benefits from decades of operational experience, performance data, inspection findings, maintenance history, and lessons learned, many advanced reactor and microreactor concepts have little or no commercial operating experience upon which to validate design assumptions, reliability estimates, operational practices, maintenance programs, or long-term material performance. This uncertainty is compounded given that 10 CFR Part 57 contemplates other areas of regulatory flexibility, including alternative quality assurance approaches, remote operations, autonomous functions, and novel safety system designs.

For this reason, DEEP supports the development of a more scalable regulatory framework but cautions against equating lower potential consequences with lower regulatory attention. While the consequence profile of these facilities may justify a more tailored licensing process, the lack of operational experience warrants a measured and deliberate approach to implementation. Regulatory flexibility should be accompanied by sufficient oversight, operating experience reviews, and opportunities for future adjustments as lessons are learned from actual deployments.

DEEP emphasizes that efficiency and scalability should not become substitutes for safety, security, or regulatory rigor. Any alternative licensing framework must continue to provide reasonable assurance that facilities can be safely designed, constructed, operated, maintained, and ultimately decommissioned. The foundational objectives of protecting public health and safety, ensuring environmental protection, maintaining robust security, and preserving defense-in-depth should remain central to any regulatory structure regardless of the size or consequence profile of the reactor.

DEEP also notes that public confidence is a critical component of successful deployment of advanced reactor technologies. Connecticut's experience with energy infrastructure projects has demonstrated the importance of transparent decision-making processes, meaningful stakeholder

engagement, and opportunities for public participation. Even where the technical risks associated with a facility are relatively low, public acceptance is often influenced by the degree to which affected communities believe their concerns have been heard and appropriately considered.

As the NRC develops and implements 10 CFR Part 57, DEEP encourages the agency to ensure that efforts to streamline licensing reviews do not inadvertently reduce opportunities for public engagement, state participation, Tribal engagement, or regulatory transparency. Public trust is built not only through strong technical safety standards but also through confidence that regulatory decisions are made through transparent, understandable, and credible processes.

Overall, DEEP supports the NRC's conclusion that existing licensing frameworks may impose unnecessary burden on certain advanced reactor and microreactor technologies and agrees that a more scalable, risk-informed approach is appropriate. However, DEEP believes that the success of 10 CFR Part 57 will ultimately depend on maintaining a careful balance between regulatory efficiency, safety, security, transparency, public confidence, and appropriate regulatory caution while experience and reliable data are obtained with these emerging technologies.

Response to Question#Q12–2: What additional, intermediate, or hybrid alternatives (e.g., targeted modifications to part 52, streamlined ITAAC constructs, or scoped use of part 53 elements) should the NRC evaluate to meet the statutory objectives while minimizing cost and schedule impacts? Please provide data, examples, or suggested regulatory text that could enable rapid, high-volume licensing of microreactors within or alongside existing regulations.

DEEP supports the NRC's evaluation of additional approaches that would achieve the statutory objectives of the ADVANCE Act while minimizing unnecessary regulatory burden and licensing delays for low-consequence reactors. In particular, DEEP would support consideration of scalable modifications to existing licensing frameworks, including 10 CFR Parts 52 and 53, where such modifications can appropriately align regulatory requirements with the reduced risk profiles of qualifying facilities.

Potential approaches could include streamlined ITAAC programs for low-consequence reactors, expanded use of standardized designs and manufacturing approvals, greater reliance on design-specific generic determinations, or incorporation of selected risk-informed elements from 10 CFR Part 53 into existing licensing pathways. Such approaches could potentially provide many of the benefits sought through 10 CFR Part 57 while leveraging existing regulatory structures and NRC experience.

At the same time, DEEP notes that 10 CFR Part 53 itself remains a relatively new regulatory framework with limited implementation and operational experience. As a result, the NRC should be cautious about assuming that 10 CFR Part 53 provisions have been sufficiently tested to serve as a mature benchmark for further streamlining. Similar to the advanced reactor technologies being considered for licensing, the regulatory frameworks themselves continue to evolve and have not yet benefited from extensive licensing, inspection, operational, and enforcement experience.

DEEP also believes that the NRC should consider the institutional and resource implications associated with maintaining multiple parallel licensing frameworks. Each regulatory framework requires development and maintenance of guidance documents, staff training programs, review procedures, inspection programs, regulatory interpretations, and stakeholder familiarity. As the number of available licensing pathways increases, so does the complexity of maintaining staff proficiency and ensuring consistent regulatory outcomes across different frameworks.

From both a regulator and applicant perspective, there are advantages to minimizing unnecessary proliferation of licensing pathways where the same safety objectives can be achieved through targeted modifications to existing regulations. Fewer regulatory frameworks may allow the NRC to focus resources on developing deep expertise, improving review efficiency, maintaining consistency, and incorporating lessons learned from actual licensing and operating experience. Likewise, applicants, states, and other stakeholders may benefit from greater predictability and familiarity with a smaller number of well-understood licensing pathways.

Accordingly, DEEP recommends that the NRC continue to evaluate whether the objectives of rapid and scalable microreactor licensing can be achieved through targeted modifications to 10 CFR Parts 52 and 53, either independently or in combination with selected 10 CFR Part 57 concepts. Such evaluations should consider not only applicant costs and review schedules but also the long-term impacts on regulatory consistency, staff proficiency, guidance development, oversight programs, difficulty of implementation, and stakeholder understanding.

Ultimately, DEEP does not oppose the development of 10 CFR Part 57 as a separate licensing framework. However, before establishing an entirely new regulatory structure, the NRC should carefully evaluate whether comparable benefits could be achieved through focused, risk-informed modifications to existing frameworks. Such an approach may provide many of the desired efficiencies while reducing the administrative burden associated with maintaining multiple parallel regulatory systems and allowing both regulators and stakeholders to build experience within a more limited set of licensing frameworks.

Cumulative Effects of Regulation (CER)

DEEP provides the following responses to the specific request for comments in Section IX. Cumulative Effects of Regulations of the FRN:

Response to CER Question #1: The NRC is proposing an effective date that will be 30 days after the date of publication of a final rule. Does this provide sufficient time to implement the proposed requirements? Please provide a rationale for your response.

DEEP does not identify the effective date of the final rule as the primary implementation challenge. DEEP recognizes and appreciates the NRC's efforts to streamline requirements and minimize cumulative regulatory impacts as part of this rulemaking. In DEEP's view, the 30-day effective date is reasonable for the adoption of the regulatory text.

However, DEEP notes that the long-term effectiveness of this framework will depend on the availability of supporting guidance and technical resources necessary to ensure consistent and technically sound oversight. As reflected in DEEP's prior comments on NRC advanced reactor rulemakings, the successful implementation of new regulatory structures hinges on the development of clear guidance, inspector training pathways, and well-defined program expectations.

Accordingly, DEEP's implementation concerns relate not to the transition date itself, but to the infrastructure required to support effective application of the new requirements. Key needs include:

- timely issuance of licensing and inspection guidance;
- development of technology-specific training for NRC staff;
- establishment of appropriate licensing fees and program codes;
- guidance addressing safety performance expectations and emergency preparedness for advanced designs; and
- coordinated updates as reactor technologies evolve.

Oversight of advanced reactor systems will require specialized technical knowledge, including advanced chemistry of alternate coolants, alternative coolant behavior, material accountability, shielding and activation product assessments, and novel reactor dynamics. These capabilities will be essential to ensuring that regulatory protections remain robust under the new framework.

For these reasons, DEEP concludes that while the proposed 30-day effective date is manageable, continued NRC support through guidance, training, and technical capability development will be critical to ensuring consistent, risk-informed, and effective oversight as deployment of new reactor technologies expands.

Response to CER Question #2: Are there unintended consequences related to this rulemaking and how should they be addressed? Please provide a rationale for your response.

DEEP has identified several potential unintended consequences associated with the proposed

rule. These concerns relate primarily to multi-unit site impacts, availability of NRC oversight during abnormal events, and clarity regarding state and Tribal consultation for amendments to Manufacturing Licenses (MLs).

First, DEEP is concerned that at a site or group of nearby sites hosting multiple low-risk reactors, certain environmental, external, or common-cause events could affect more than one reactor simultaneously. Draft NUREG-2271 indicates that, for sites containing multiple reactors that do not share safety-related structures, systems, and components, each reactor may be treated as an independent radiological source and may have its own site boundary nested within a larger licensee-controlled perimeter. While this approach may be appropriate for reactor-specific licensing and safety analyses, it may not fully capture the cumulative emergency preparedness implications of multi-unit events affecting more than one reactor at a site. Such scenarios could result in radiological releases from multiple units, potentially producing aggregate offsite consequences that differ from those evaluated for any individual reactor. DEEP recommends that the NRC evaluate whether additional guidance or analysis is needed to address emergency planning assumptions, protective action decision-making, and cumulative dose assessments for multi-unit scenarios where multiple reactors are located within a common site boundary or licensee-controlled area. This would help ensure that the emergency preparedness framework appropriately accounts for the potential consequences of events affecting more than one reactor, even when the reactors are licensed and analyzed as independent radiological sources.

Second, DEEP is concerned about the elimination of resident inspectors and the absence of clear expectations regarding NRC inspector availability. While DEEP understands that resident inspectors may not be practical for sites with numerous small or low-risk reactors, NRC inspectors provide essential independent oversight during events and abnormal operating conditions. The proposed rule does not specify expectations for NRC response times, staffing arrangements, or mechanisms to ensure staff can rapidly deploy during an emergency.

DEEP recommends that the NRC clarify how inspector availability will be maintained, including whether designated NRC staff will be assigned regionally or to specific states, and what minimum response expectations apply during an event. In particular, the NRC should consider a regional field office model similar to that employed by Naval Reactors, where inspectors are assigned responsibility for oversight of multiple reactors within a geographic area rather than maintaining a permanent presence at a single facility. Such an approach would provide a practical means of maintaining independent regulatory oversight for fleets of microreactors and other low-consequence reactors while ensuring that experienced inspectors remain sufficiently familiar with facility operations, local conditions, and licensee performance to effectively respond during events, outages, inspections, or abnormal operating conditions. DEEP believes that a clearly defined regional inspection presence would help preserve many of the benefits of resident inspector oversight while remaining consistent with the streamlined and scalable nature of the 10 CFR Part 57 framework.

Third, the proposed rule introduces uncertainty regarding state and Tribal consultation for amendments to ML's. Because Site Licenses (SLs) and Operating Licenses (OLs) may incorporate amendments to an ML without requiring their own license amendment process, it is

unclear how state and Tribal consultation will occur when ML amendments effectively modify requirements applicable to multiple sites. It is not specified whether every State Liaison Officer in states where ML-based reactors are operating or planned will be consulted, whether consultation will be limited, or whether consultation would not occur at all. Similar questions exist for Tribal consultation. DEEP recommends that the NRC provide clear guidance on how consultation responsibilities will be implemented for ML amendments, including which state and Tribal entities will be engaged and at what stage.

In summary, although the proposed rule is intended to reduce regulatory burden, DEEP recommends that the NRC address these potential unintended consequences to preserve effective oversight, ensure clarity in state and Tribal roles, and maintain a risk-informed regulatory framework as deployment of advanced reactor technologies expands.

Response to CER Question #3: Please comment on the NRC’s cost and benefit estimates in the regulatory analysis that supports this proposed rule.

DEEP has reviewed the draft regulatory analysis for the proposed 10 CFR Part 57 rulemaking. DEEP appreciates the NRC’s effort to provide a structured cost-benefit evaluation; however, several issues limit DEEP’s ability to fully validate the conclusions presented.

First, the regulatory analysis contains multiple instances of the notation “Error! Reference source not found.” in sections presenting key findings and summary tables, including the discussion of total costs and benefits for the proposed rule (e.g., Executive Summary and Table 1). These missing references inhibit DEEP’s ability to confirm the cited values, understand the supporting basis for cost savings, and verify whether those statements align with the methods and assumptions used in the analysis. DEEP recommends that the NRC correct and reissue the regulatory analysis so stakeholders can review a complete and technically coherent document.

Second, the regulatory analysis explicitly states that the NRC does not expect Tribal, State, or local government organizations to experience incremental costs or averted costs relative to the baseline. Specifically, Section 3 states:

“The NRC considered the incremental impact of the proposed rule for other entities, including Tribal, State, and local government organizations, but it does not expect such entities to experience incremental costs or averted costs compared to the regulatory baseline.”

DEEP does not agree with this conclusion. The regulatory analysis does not account for:

- State emergency planning (EP) obligations, including offsite preparedness, coordination with licensees, development of plans, and ongoing training. The proposed rule alters EP requirements substantially (e.g., no Emergency Planning Zone (EPZ) requirement under 10 CFR Part 57), yet states remain responsible for public protective actions and consequence management should an incident occur;

- State roles in siting and environmental permitting, which continue to apply even when NRC provides a categorical exclusion for federal NEPA review. These state-level reviews represent real costs for states, especially where state environmental statutes require independent assessments; or
- State coordination responsibilities for factories licensed under Manufacturing Licenses (MLs), including emergency management coordination for sites that fuel, transport, or store manufactured reactors. These activities introduce unique planning burdens not present under current licensing frameworks.

DEEP recommends that the NRC revise the analysis to fully characterize potential state impacts rather than assuming they are negligible.

Third, the NRC's cost and benefit estimates rely heavily on deployment projections that span very wide ranges, including:

- mass-produced microreactor deployment projections between 600 and 10,000 units by 2066;
- comparable variability in "other reactor" deployments; and
- extensive use of stochastic modeling and Monte Carlo simulations to address uncertainty.

These projections significantly influence the magnitude of the estimated \$3.76 billion (7% NPV) to \$11.84 billion (3% NPV) in total cost savings. Given the current early stage of commercial development for these reactor types, the projected deployment volumes introduce substantial uncertainty into the cost estimates. DEEP recommends that NRC present additional sensitivity cases that use more conservative deployment assumptions, and clarify how costs and benefits would change if deployments occur at the low end of anticipated ranges.

Finally, the regulatory analysis does not address potential state-incurred costs arising from new regulatory models introduced in the proposed rule, including factory fueling, transportation of fueled reactors, reliance on generally licensed reactor operators, or standardized operational programs with finality. Although these provisions may reduce costs for applicants, they would increase state oversight complexity and coordination requirements once these reactors are deployed.

Based on the issues described above, DEEP recommends that the NRC:

- correct all missing reference errors and republish the regulatory analysis for full public review;
- incorporate state and Tribal government costs into the analysis, particularly for emergency preparedness, siting, and coordination roles;
- provide sensitivity analyses using lower deployment scenarios; and
- acknowledge that state obligations under the proposed framework may introduce non-trivial costs not captured in the current analysis.

Additional Comments

DEEP offers the following comments.

Comment #1: DEEP Comment on Proposed 10 CFR 57.25(a) Dose-Based Entry Criterion

DEEP supports the NRC's effort to establish objective, risk-informed eligibility criteria for reactors licensed under proposed 10 CFR Part 57. However, DEEP requests clarification regarding the relationship between the proposed dose-based entry criterion in 10 CFR § 57.25(a) and the U.S. Environmental Protection Agency's (EPA's) protective action guidance framework used by Federal, State, Tribal, and local emergency response organizations.

Proposed 10 CFR § 57.25(a) establishes an entry criterion of 1 rem Total Effective Dose Equivalent (TEDE) to an individual located beyond the site boundary for the duration of a postulated accident. As described in the proposed rule and supporting guidance, compliance with this criterion serves as a principal basis for concluding that a reactor presents sufficiently low consequences to justify reduced emergency preparedness requirements, including the absence of a plume exposure pathway Emergency Planning Zone (EPZ).

DEEP notes, however, that the proposed use of the 1 rem TEDE criterion differs from the manner in which the same dose value is used in the EPA's Protective Action Guides and Planning Guidance for Radiological Incidents (PAG Manual)⁵. Under the EPA PAG framework, 1 rem projected dose is not evaluated over the duration of an accident but rather represents the projected dose to an individual over a period of four days (96 hours). The EPA PAG Manual identifies a projected dose of 1 rem TEDE over four days as the threshold for consideration of protective actions such as evacuation or shelter-in-place.

As currently written, it is unclear whether compliance with the proposed 10 CFR § 57.25(a) criterion would necessarily ensure that EPA PAG thresholds would not be exceeded. For example, it is conceivable that a reactor accident could involve a relatively short-duration release lasting only a few hours that results in a calculated dose of less than 1 rem TEDE when evaluated over the duration of the accident, thereby satisfying the 10 CFR Part 57 eligibility criterion. However, when evaluated using the methodologies and assumptions contained in the EPA PAG Manual, the same release could potentially result in a projected four-day dose exceeding the PAG threshold and therefore support consideration of protective actions.

This distinction is particularly important because the proposed rule uses compliance with 10 CFR § 57.25(a) as a basis for reduced emergency planning requirements. If the NRC intends the 1 rem TEDE criterion to demonstrate that offsite protective actions would not be warranted under EPA guidance, then the NRC should clearly explain how the proposed accident dose calculation methodology aligns with the PAG methodology and demonstrate that compliance with 10 CFR § 57.25(a) provides equivalent protection.

⁵ U.S. Environmental Protection Agency, PAG Manual: Protective Action Guides and Planning Guidance for Radiological Emergencies (Washington, DC: EPA, January 2017), 2-4, <https://www.epa.gov/radiation/protective-action-guides-pags#pagmanual>.

Accordingly, DEEP recommends that the NRC clarify:

- How the dose calculation methodology supporting 10 CFR § 57.25(a) relates to the EPA PAG methodology for evaluating projected dose over a 96-hour period;
- Whether compliance with the proposed 10 CFR § 57.25(a) criterion is intended to demonstrate that EPA PAG thresholds for evacuation or shelter-in-place would not be exceeded;
- Whether accident analyses supporting 10 CFR Part 57 eligibility should explicitly evaluate projected doses using EPA PAG methodologies and assumptions; and
- Whether additional guidance is necessary to ensure consistent treatment of accident consequences between reactor licensing analyses and offsite emergency response planning frameworks.

Given that the proposed dose criterion serves as a foundational basis for reduced emergency preparedness requirements and the determination that no plume exposure pathway EPZ is necessary, DEEP believes it is important that the NRC clearly resolve the relationship between the proposed criterion and the existing Federal protective action framework used by emergency management organizations nationwide.

Clarification of this issue would improve regulatory transparency, facilitate State and local emergency planning reviews, and provide greater confidence that the underlying assumptions supporting reduced emergency planning requirements are consistent with established Federal radiological protection guidance.

Comment #2: Financial Protection and Indemnification Requirements Under the Price-Anderson Act

DEEP appreciates the NRC's consideration of how financial protection and indemnification requirements should be applied to facilities licensed under proposed 10 CFR Part 57. DEEP recognizes that the Price-Anderson Act expressly provides the NRC discretion to consider factors such as the type, size, location, and hazards associated with licensed activities when determining appropriate levels of financial protection and indemnification.

However, DEEP urges the NRC to exercise caution in assuming that compliance with the proposed dose-based entry criterion in 10 CFR § 57.25(a), or the associated conclusion that a plume exposure pathway Emergency Planning Zone is unnecessary, necessarily translates into proportionally lower financial liabilities following a reactor accident.

The proposed 10 CFR Part 57 framework is premised on demonstrating that a postulated accident would not exceed the 1 rem Total Effective Dose Equivalent (TEDE) criterion at the site boundary. While this criterion may support a conclusion that large-scale protective actions such as evacuation are unlikely to be necessary, it does not mean that credible accident scenarios involving the release of fission products are not possible. Many reactor designs that may qualify

under 10 CFR Part 57 still contain significant inventories of radioactive material and could experience accidents resulting in environmental contamination, contamination of infrastructure, land-use restrictions, remediation activities, waste management costs, economic disruption, and long-term recovery efforts.

DEEP is concerned that analyses focused primarily on potential evacuation costs would significantly underestimate the financial consequences associated with radiological incidents. Historical experience from major radiological events, including the response and recovery efforts following the Fukushima Daiichi accident, as well as numerous domestic radiological contamination and remediation projects, demonstrate that environmental cleanup, waste disposal, site remediation, long-term monitoring, economic losses, public communication, and restoration activities can represent a substantial portion—and in some cases the majority—of overall accident-related costs.

Accordingly, DEEP recommends that the NRC evaluate potential financial protection requirements using a broader consideration of accident consequences rather than relying solely on projected public dose or emergency protective action needs. The NRC should explicitly consider the potential costs associated with environmental remediation, contaminated material management, long-term monitoring, infrastructure impacts, economic disruption, and restoration activities, even for reactor designs that satisfy the proposed 10 CFR § 57.25(a) criterion.

DEEP also encourages the NRC to consider retaining broad participation by 10 CFR Part 57 licensees within the existing Price-Anderson framework rather than creating substantially separate financial protection structures for advanced reactors. While lower-consequence reactors may warrant reduced individual contributions or adjusted fee structures, there are important public policy and safety benefits associated with maintaining a common industry risk-sharing pool.

One potential approach would be to maintain participation by all reactor licensees while establishing contribution levels based upon a risk-informed metric such as licensed thermal power, radionuclide inventory, estimated accident consequences, or a combination of such factors. This would recognize differences in risk profiles while preserving the fundamental risk-sharing structure that has been a hallmark of the Price-Anderson system.

DEEP believes the existing pooled approach provides benefits beyond simply ensuring the availability of financial resources following an accident. By sharing responsibility for accident-related costs across the industry, the Price-Anderson framework creates a collective incentive for licensees to support strong safety performance throughout the national reactor fleet. All participants have a financial interest in preventing significant accidents, regardless of where they occur. This structure encourages information sharing, operational excellence, industry-wide learning, continuous improvement in safety practices, and accountability.

Conversely, creating highly segmented or reactor-specific financial protection structures would weaken these collective incentives and reduce the shared responsibility that has contributed to the strong safety culture of the U.S. nuclear industry.

Accordingly, DEEP recommends that the NRC proceed cautiously before establishing substantially reduced financial protection or indemnification requirements for 10 CFR Part 57 facilities. Any reduction should be supported by a comprehensive evaluation of the full range of potential accident-related costs, including environmental remediation and recovery expenses, and should seek to preserve the benefits of industry-wide risk sharing that have long been central to the success of the Price-Anderson framework.

Comment #3: Proposed Categorical Exclusion (CATEX) under National Environmental Protection Act (NEPA)

DEEP generally supports the NRC's objective of developing risk-informed and performance-based environmental review processes that are appropriately scaled to the lower-consequence risk profile of microreactors and other reactors licensed under proposed 10 CFR Part 57. However, DEEP believes that categorical exclusions should be implemented cautiously and with appropriate limitations to ensure that environmental review efficiencies do not inadvertently reduce transparency, stakeholder engagement, Tribal consultation, or consideration of site-specific impacts.

DEEP notes that the NRC's proposed CATEX framework relies on the assumption that qualifying facilities will present limited environmental impacts and will satisfy a number of screening criteria relating to land disturbance, water use, air emissions, and other environmental considerations. While DEEP agrees that many low-consequence reactor deployments may ultimately qualify for streamlined environmental review, several observations from DEEP's comments warrant consideration.

First, DEEP notes that a federal CATEX does not eliminate the need for state environmental reviews, permitting actions, or coordination activities. As discussed in DEEP's comments on the Regulatory Analysis, states may continue to incur costs associated with environmental permitting, siting reviews, emergency planning coordination, and stakeholder engagement even when NRC determines that preparation of an Environmental Assessment or Environmental Impact Statement is unnecessary. State environmental statutes and permitting programs frequently require independent review of wetlands, water resources, coastal resources, air emissions, land use impacts, and other environmental considerations. Accordingly, DEEP recommends that NRC avoid assumptions that CATEX eligibility eliminates environmental review burdens for states.

Second, DEEP believes Tribal consultation should remain an important consideration regardless of CATEX eligibility. Consistent with DEEP's support for the comments submitted by the Mashantucket Pequot Tribal Nation, early consultation regarding cultural resources, archaeological sites, burial sites, traditional cultural properties, treaty-sensitive resources, and other Tribal interests should occur before irreversible project commitments are made. A categorical exclusion should not be viewed as a substitute for meaningful government-to-government consultation or early identification of culturally sensitive resources.

Third, DEEP believes CATEX eligibility should be closely tied to objective, easily verifiable site characteristics. Throughout its comments, DEEP supported the use of clear, measurable criteria and cautioned against excessive reliance on assumptions that await validation through operating experience. Similar principles should apply to CATEX determinations. To the extent possible, site qualification should rely upon readily available environmental, geological, hydrological, meteorological, and land-use information rather than requiring extensive studies. At the same time, the criteria should be sufficiently objective to ensure that projects presenting potentially significant environmental impacts do not qualify for categorical exclusion based solely on modeling or generalized assumptions.

Fourth, DEEP encourages the NRC to consider cumulative regulatory effects when implementing CATEX provisions. 10 CFR Part 57 already incorporates numerous innovations, including performance-based licensing, streamlined emergency preparedness requirements, reduced oversight expectations, limited use of general licenses, remote and autonomous operations, and expanded reliance on applicant-developed programs. DEEP repeatedly noted throughout its comments that the NRC should be cautious about changing too many elements of the regulatory and oversight framework simultaneously before sufficient implementation experience is gained. The CATEX provisions should therefore be viewed within the broader context of these concurrent changes and the compounded impact of such changes.

Finally, DEEP notes that community engagement and public confidence remain critical considerations. DEEP's recent experience evaluating advanced nuclear technologies through a community-centered framework has demonstrated that early stakeholder engagement, transparency, and clear communication are often as important to project success as the technical merits of the technology itself. Even where a CATEX is appropriate, applicants should be encouraged to engage affected communities, state agencies, local governments, and Tribal Nations early in the siting process. DEEP recommends that the NRC be cognizant that streamlining environmental review could reduce public confidence by being interpreted as reducing opportunities for meaningful public participation.

Accordingly, DEEP generally supports the NRC's effort to develop CATEXs appropriate for lower-consequence reactors but recommends that such exclusions be implemented with careful attention to state permitting authorities, Tribal consultation, site-specific environmental conditions, cumulative regulatory effects, and continued stakeholder engagement. As with several other innovative provisions of 10 CFR Part 57, DEEP believes implementation experience should be gained before considering any significant expansion of CATEX eligibility or scope.

Comment #4: Additional Comments Regarding Table C-1 Environmental Impact Findings

DEEP offers the following observations regarding several of the environmental findings and assumptions contained in Table C-1.

Threatened and Endangered Species Habitat

Several findings in Table C-1 rely upon the assumption that the project footprint would not contain habitat known to be suitable for one or more federally or state-listed threatened or endangered species. DEEP notes that this criterion may not be sufficiently clear or readily verifiable. While Natural Diversity Database (NDDDB) mapping and similar resource inventories can identify areas with documented occurrences of protected species, the absence of a mapped occurrence does not necessarily indicate the absence of suitable habitat. In many cases, suitable habitat may exist even where a species has not been previously observed or recorded. Accordingly, DEEP recommends that the NRC clarify how it intends to determine whether an area constitutes suitable habitat for threatened or endangered species and what level of review or consultation would be required to support such a determination. Reliance solely on existing occurrence databases could result in potentially important habitat being overlooked.

Construction Versus Operational Impacts

DEEP notes that several findings presented within the operational impacts section appear to address impacts associated with construction activities. For example, statements indicating that "temporary disturbed land would be revegetated once the lands are no longer needed to support building activities" describe construction-related impacts and mitigation measures rather than operational impacts. Furthermore, some disturbances associated with site preparation, grading, utility installation, access roads, security infrastructure, and related activities may not be temporary in nature. DEEP recommends that the NRC clearly distinguish between construction-phase and operational-phase impacts and ensure that assumptions regarding temporary disturbance are adequately supported.

Aquatic Resources

DEEP believes that several findings regarding impacts to aquatic resources may not adequately account for site-specific conditions. Potential impacts to aquatic ecosystems can vary significantly depending on the characteristics of the affected waterbody and the species present. Waterbodies supporting federally or state-listed threatened or endangered species, critical habitat, migratory species, or runs of anadromous fish may warrant substantially different impact conclusions than waterbodies lacking such resources. Accordingly, DEEP recommends that the NRC recognize that impacts to aquatic resources may range from small to large depending on project location and ecological context.

Radioactive Waste Management

DEEP notes that the discussion of radioactive waste management impacts associated with reactor operations provides limited information supporting the NRC's conclusions. In several instances, the analysis appears to rely primarily on the assertion that radioactive waste generated by a microreactor or other reactor licensed under 10 CFR Part 57 would be less than that generated by an existing commercial nuclear power plant. While waste volumes may be lower, waste management impacts depend upon numerous additional factors, including waste classification,

radionuclide composition, packaging requirements, storage duration, transportation considerations, disposal pathways, and the availability of licensed disposal facilities. DEEP recommends that the NRC provide additional technical support for its conclusions regarding radioactive waste management impacts.

Project Location and Site-Specific Conditions

More generally, DEEP notes that several impact determinations presented in Table C-1 appear to rely on generic assumptions that are not applicable in all circumstances. While many impacts associated with low-consequence reactors may be expected to be small, the actual significance of environmental impacts often depends heavily on project location and site-specific conditions. Factors such as proximity to sensitive ecological resources, wetlands, coastal resources, drinking water supplies, environmental justice communities, Tribal resources, transportation infrastructure, and existing land uses can substantially influence environmental outcomes. Accordingly, DEEP recommends that the NRC acknowledge throughout Table C-1 that certain impacts may range from small to large depending on project location and site-specific characteristics, even where the reactor technology itself presents a lower radiological risk profile.