



August 31, 2026

U.S. Nuclear Regulatory Commission
11555 Rockville Pike,
Rockville, Maryland 20852

Subject: Public Comment on NRC's Proposed Rule, Reforming and Modernizing the Radiation Protection Framework (RIN 3150-AL47, NRC-2025-1140)

Dear NRC Staff,

The Nuclear Innovation Alliance (NIA) is an independent, non-profit, non-partisan “think-and-do” tank whose mission is to help create the conditions for success for new nuclear energy so it can play a major role as an energy security and climate solution. Through policy analysis, research, outreach, and education, NIA is catalyzing the next era of nuclear energy. We focus on regulatory modernization, federal and state policy, and enabling private investment to support new reactor commercialization while meeting national environmental and energy security goals.

NIA appreciates the opportunity to comment on the July 15, 2026, proposed rule, Reforming and Modernizing the Radiation Protection Framework. NIA is supportive of NRC's proposal to continue to rely on the Linear No Threshold (LNT) model, but has some concerns about other areas of the proposed rule. In February 2026,¹ NIA said that any reconsideration of the U.S. radiation protection framework must keep in mind the goals of reestablishing the United States as the global leader in nuclear energy and maintaining the United States' reputation as a leader in nuclear safety. NIA emphasized that any changes the United States makes in its radiation protection framework must be based on the best available scientific information and developed through a process that maintains public trust.

Summary of NIA's key comments

ALARA

- NIA believes the longstanding issues with ALARA is not the concept itself, but rather how it has been implemented through regulation, guidance, and enforcement. It is

¹ <https://nuclearinnovationalliance.org/reconsidering-us-radiation-protection-framework-under-executive-order-14300>

possible that a graded approach could achieve a reasonable outcome, but as with ALARA, that would depend on how it is implemented.

- In particular, the NRC proposes to rely on as-yet-unseen guidance to determine the thresholds and to describe how the graded approach is applied. Ideally, this information would not only be in guidance (i.e., the final rule should define the thresholds and the actions needed to be taken at each threshold). However, if those important components remain in guidance, it is especially important that the guidance be publicly vetted before the rule is final.
- For the proposed graded approach to be workable, it would need to have clear thresholds that trigger a specified action.

Guidance

- NRC should create clear and detailed guidance on how to establish best practices for radiation safety in all sectors. This guidance should be published in draft form that is open for public comment from all stakeholders, and NRC should address those comments. The rule should not be finalized until it can be published in conjunction with final guidance. Because of the proposed rule's heavy reliance on guidance, NRC should not finalize the proposed rule until all guidance can be reviewed by stakeholders to ensure the rule and implementation are mutually coherent and durable.

Interagency Coordination

- NRC should convene an Interagency Steering Committee on Radiation Standards (ISCORS) meeting for federal agencies with relevant authority and responsibility to gain alignment on radiation protection standards before this rule is finalized.
- Coordinate with the Environmental Protection Agency (EPA) on the proposed change in effluent standards to ensure that the change is durable and provides certainty.

PODLE

- If NRC finalizes a planned occupational dose limit extension (PODLE), NRC should implement a lifetime limit as currently used in planned special exposure (PSE).
- NRC should apply the PSE consent and reporting elements to any PODLE even if the exceptional-circumstance test is relaxed. NRC should also identify the operational scenarios this is meant to address and scope the PODLE bounds accordingly.
- NRC should strengthen reporting and transfer of dose record requirements in all radiation-related industries. NRC should also lead a multiagency effort to create a tracking system that allows for dosimetry records to be shared at a national level.

Other

- NRC should define the term “variance” in the proposed rule language or guidance to allow for clarity on what is considered a variance vs. an exemption and how to request one.
- NRC should narrow rather than eliminate the requirement in Part 53 that annual reports on dose assessment of effluent discharges be submitted to the NRC and hence be publicly available. NRC should require reports to be submitted, at a minimum, whenever remedial actions are warranted by the monitoring results.

Proposed ALARA removal

NIA previously recommended that ALARA be mended, not ended. The February 2026 blog² noted that, even though the word “reasonably” is an explicit part of the ALARA acronym, there are now numerous instances of it being implemented inconsistently and sometimes unreasonably. Minimizing doses can reduce operating costs because it can entail working more efficiently to minimize time of exposure in high radiation environments. On the other hand, minimizing very low doses can increase costs beyond the point of real benefit and non-radiation occupational risk. NIA found that the ALARA principle itself is not the problem, but rather how it is being implemented, and recommended implementing ALARA more reasonably, carefully taking into account these real-world tradeoffs.

The proposed rule states that it aligns with the international standards concept of optimization as defined in the 2022 IAEA Nuclear Safety and Security Glossary. The definition of optimization per IAEA is “The process of determining what level of protection and safety would result in the magnitude of individual doses, the number of individuals (workers and members of the public) subject to exposure and the likelihood of exposure being as low as reasonably achievable, economic and social factors being taken into account (ALARA).” NIA finds it noteworthy that ALARA is in the definition that IAEA uses. Additionally, some companies have said that their plant design and plans will not change because other countries still implement ALARA or ALARA-like concepts. Companies who plan to market their technologies outside the United States must comply with other countries’ requirements, including their approach to consider ALARA or ALARA-like concepts. A “graded approach” will only improve “reasonableness” with clearer definitions of thresholds and explanations of what actions are triggered when thresholds are met. If the graded thresholds do not trigger an action, then the outcome of the graded approach is unclear. **NIA recommends that any graded approach based on optimization includes clear thresholds that trigger action.**

NIA also has concerns about specific sectors like radiography, where some of the highest occupational doses occur. There is no organization equivalent to the Institute of Nuclear Power Operations (INPO) for radiography. Historically, INPO has set a high bar for radiation

² <https://nuclearinnovationalliance.org/reconsidering-us-radiation-protection-framework-under-executive-order-14300>

protection best practices with which its members comply and to which insurance companies pay attention. If INPO maintains its best practices, removing ALARA from the regulation may not have as big impact on the power industry, as on the other sectors like radiography or medical uses. **NIA recommends NRC create clear and detailed guidance on how to establish best practices for radiation safety in all sectors. This guidance should be published in draft form with a public comment period, incorporate public comments and be completed before the rule is finalized.**

NIA firmly believes the longstanding issues with ALARA is not the concept itself, but rather how it has been implemented through regulation, guidance, and enforcement. It is possible that a graded approach could achieve a reasonable outcome, but as with ALARA, that would depend on how it is implemented.

Guidance

As discussed elsewhere in this letter, the proposed rule relies heavily on guidance that has not yet been published. **NIA strongly recommends that NRC not finalize the proposed rule until guidance can be reviewed by stakeholders.** While publishing vetted guidance with the final rule is generally preferred in any case, it is particularly important in this instance to ensure the rule and its implementation are clear, reasonable and durable. In particular, the NRC proposes to rely on as-yet-unseen guidance to determine the thresholds and to describe how the graded approach is applied. Ideally, this information would not only be in guidance (i.e., the final rule should define the thresholds and the actions needed to take at each threshold). However, if those important components remain in guidance, it is especially important that the guidance be publicly vetted before the rule is final.

Federal Authority

There are 79 regulations across 10 federal agencies pertaining to radiation protection.³ Some refer to sections of Part 20 (NRC's Standards for Protection Against Radiation) or Part 835 (Department of Energy's (DOE) Occupational Radiation Protection Program). While the NRC, DOE, and EPA are the agencies with the primary responsibility for writing and implementing radiation protection regulations, all the agencies that regulate radiation should ensure a common understanding of the best available scientific and technical information across the federal government, coordinate based on each agency's respective authorities and responsibilities, and where feasible implement a common set of principles and limits.

A lack of alignment across 10 agencies when it comes to radiation protection creates issues. For example, a company that undertakes the pilot program through DOE may need to adjust its radiation protection program or design to meet different NRC standards. This is not an efficient process. ISCORS was established to facilitate "consensus on acceptable levels of radiation risk to

³ [The Current State of Radiation Protection in the United States by the Breakthrough Institute](#)

the public and workers and promote consistent risk approaches in setting and implementing standards for protection from ionizing radiation.”⁴ **NIA recommends that NRC convene an ISCORS meeting(s) for the relevant federal agencies to gain alignment on radiation protection standards before this rule is finalized.**

Effluents

The NRC is proposing to change the nuclear reactor effluent constraint from 10 to 25 mrem per year⁵ using its authority under the Atomic Energy Act (AEA). However, the Clean Air Act (CAA) designated the EPA as having the responsibility of regulating radionuclides as hazardous air pollutants and ensuring there is an ample margin of safety to protect public health. Thus, EPA and NRC have overlapping authorities that must be reconciled. Section 112(d)(9) allows for the EPA to forgo requiring a rule for NRC licensed facilities if EPA determines that NRC’s regulatory regime is sufficiently protective.

In 1995, the EPA “decline[d] to regulate Nuclear Regulatory Commission (NRC) licensees” with respect to radionuclide air pollution because they “determine[d] by rule, and in consultation with the NRC, that the regulatory program established by the NRC pursuant to the Atomic Energy Act provides[d] an ample margin of safety to protect the public health.” It is NIA’s understanding that if NRC changes its rule, EPA could review NRC’s updated limit and if it determines it is not protective enough, could establish its own radionuclide air emissions limits.

Thus, there is potential for conflicting NRC and EPA rules if the agencies are not aligned on the change from 10 mrem to 25 mrem and removal of ALARA. While the NRC has provided a technical basis for its proposed change, it is unclear in the proposed rule package if engagement between the two agencies occurred. If this engagement occurred, NIA recommends it be made public. Absent that coordination, the NRC’s proposed change could introduce instability, either through EPA reconsidering its ample margin justification through their own rulemaking, or through a petition for rulemaking submitted to EPA by a third party.⁶

While NIA encourages the use of all pathways for the public to comment, it is important that the NRC create a rule that has both clarity and durability. **NIA recommends NRC coordinate with the EPA on this change and provide a public record of that coordination to ensure that the change is durable and provides certainty.**

⁴ <https://www.epa.gov/iscors>

⁵ This section addresses parts of NRC’s Request for Comment Question 5

⁶ The EPA’s 1996 final rule on National Emission Standards for Radionuclide Emissions (61 FR 68978) states that “[i]n the event that the NRC regulatory program does not assure that licensee emissions result in doses at or below 10 mrem/year, any interested person may petition EPA to initiate a rulemaking to reinstate Subpart I. Furthermore, EPA can act on its own initiative to reconsider the rescission if new information indicates that the public health is not protected with an ample margin of safety.” This provision introduces the potential for instability in the event of a petition to the EPA to reconsider its prior determination.

PODLE

The proposed rule allows licensees to exercise a new planned occupational dose limit extension (PODLE). The current regulations allow for planned special exposures (PSEs), provided certain criteria are met. No licensee has used this method since it was introduced in 1991. NRC determined that the PSE process was overly burdensome which “likely dissuades licensees from viewing PSEs as a viable option.” The new PODLE process would allow licensees to manage a pre-planned exceedance of annual occupational limits for workers as long as “the overall dose is limited within specified multi-year average values and annual limits are limited to twice the applicable limit.” This method uses a retroactive look at the workers’ previous 5-year dose. If the dose was not exceeded, a licensee can periodically exceed applicable dose limits for an individual worker, provided that certain criteria are met. The criteria are:

“(1) the licensee does not authorize a dose that would cause the individual to receive twice the applicable annual dose limit in a year, and

(2) sufficient retrospective dose is available to the individual.”

The rule package further proposes a constraint that “approval of a planned occupational dose limit extension for an adult worker must be in writing before the exposure occurs; the individual must be informed of the purpose of the planned operation, estimated doses and their associated risks, and measures taken to manage doses; and the licensee must determine the occupational exposure of the individual during the current and preceding four years (see 10 CFR 20.1205).” This process on the surface seems reasonable but NIA has several concerns with the proposed implementation of PODLE.

PODLE, as currently proposed, does not require a lifetime cap, whereas the current PSE requirements have a 25-rem lifetime limit. Under PODLE a worker maxing out every five years over a 40-year career receives a cumulative dose of around 200 rem, which exceeds NCRP 116's lifetime guidance for radiation exposure. It is difficult to predict how often licensees would use PODLE, especially with no lifetime limit requirement. **NIA recommends NRC keep a lifetime limit alongside the multiyear limit.**

As discussed above, 10 CFR 20.1205 requires that individuals involved in a PODLE must be “(1) Informed of the purpose of the planned operation; (2) Informed of the estimated doses and associated potential risks and estimated radiation levels or other conditions that might be involved in performing the task.” There needs to be specific requirements in guidance for briefing the individual to ensure they are properly informed. For example, cardiac catheterization physicians are purportedly notorious for exceeding dose limits and simply “forgetting” to wear dosimetry badges. These physicians have made a personal judgement to take those actions. The result is an unbadged worker with no dose record and no way to know what risk he or she has accepted. Further, in a scenario where a worker is asked by his employer to agree to a PODLE, informed consent is especially important. The regulator's job should be to make sure the

worker's judgement is informed and the dose is properly recorded. PODLE without consent or reporting requirements would extend the same blind spot into the licensed workforce. **NIA recommends that NRC apply the PSE consent and reporting elements to PODLE. Furthermore, NRC should identify the operational scenarios this is meant to address and scope the PODLE bounds accordingly. The companion Regulatory Guide also needs to be available for public comment and finalized before the rule goes into effect.**

NIA is supportive of NRC's proposal to allow alternative modern dosimetry methods. This change reflects innovation in technology. That said, there remains an issue with dosimetry records being properly shared between licensees. The current reactor fleet is able to share dosimetry records from plant to plant with a Form 4/5 transfer. While this practice is a step in the right direction, it relies on the records transfer actually happening. And in any case, this practice should be implemented beyond the power industry, for example, to allow the medical workforce to maintain accurate data for physicians who move from hospital to hospital. NRC could strengthen this process by adding requirements to ensure the transfer of data occurs. Further, there is an additional concern with respect to accurate medical worker dose records. Currently, if a dosimetry company goes out of business, there is no way for an individual to access their dosimetry records. For a medical worker that moves between various hospitals throughout the year, the risk of data loss could become an issue as they would have no total dose record and may not qualify to use PODLE.

Finally, the potential for a greater number of dose extensions under PODLE requires greater emphasis on maintaining accurate dose records and record continuity. Itinerant outage contractors may move between sites (and licensees) often throughout a given outage season. Without a consent requirement, an obligation to obtain prior dose history, or a per-use report to NRC, no provision exists to avoid PODLEs at multiple licensees in one season. NRC needs to determine a stronger method to track and share dosimetry for any industry that uses radioactive sources. Agreement States will have an even harder time monitoring workers who move between hospitals or across different licensees, as they are already stretched too thin. **NIA recommends NRC strengthen requirements for reporting and transfer of dose records in all radiation-related industries. NRC should also lead a multiagency effort in creating a tracking system that allows for dosimetry records to be shared at a national level.**

Variances

In the preamble, NRC notes that one of the major proposed provisions is to “[a]llow for variances in public dose limits and/or accessible dose rates on a case-by-case basis, with the implementation of adequate controls.” Additionally, in the public meeting on the proposed rule on August 10th, the NRC staff discussed the term “variance.” The staff stated that there would be no exemptions to radiation protection limits and instead noted that they are proposing already existing variances in the rule. NRC further stated that the variances are looked at case by case. The term “variance” is not defined in the proposed rule. **NIA recommends NRC define**

“variance” in the rule language or guidance to allow for clarity on what is considered a variance vs. an exemption, how to request one, and how NRC decides whether to grant one.

Part 53

The conforming changes to Part 53 delete the requirement for licensees annually to submit a dose assessment of effluent discharges. Specifically, 10 CFR 53.1645(a) is revised to require such reports be developed and maintained rather than submitted. The proposed Radiation Protection rule would revise Part 53 to say, “the program required by §§ 53.850(a) and 53.850(b) shall include requirements for when such a report, or reports, must be submitted to the Commission.” The proposal further revises 53.850(b)(2) to say, “the information that should be included in the report, or reports, required by § 53.1645.” These two sets of revisions are in conflict, and NRC needs to resolve that conflict.

NRC currently requires a report within 30 days of the end of the quarter during which the release occurred that “exceed[s] one-half the design objective annual exposure.” NIA agrees that the threshold for submitting reports is too low, considering that the design objective doses are much lower than public dose limits, and creates an unnecessary administrative burden. But NIA is concerned that the revised rule omits any criteria for when reports should be shared with the NRC and may reduce transparency about radiological releases. Instead of only deleting 53.1645(b), NIA recommends also revising 53.1645(a) to create such criteria.

NIA is concerned that transparency and public engagement would be hampered if the annual reports are not submitted to the NRC, thereby becoming publicly available, as is current practice. **NIA agrees that not requiring routine annual reports to be submitted to NRC would be more efficient. However, NRC should require reports to be submitted whenever remedial actions are warranted by the monitoring results.**

In addition, the NRC proposes to revise the requirement that the licensee provide an estimate of the dose received by the maximally exposed member of the public in an unrestricted area from effluents and direct radiation from contained sources during the previous calendar year. Instead, the NRC proposes to require that reports must include any information as may be required by the Commission to estimate maximum potential annual radiation doses to the public resulting from effluent releases, or to independently verify results. It is unclear whether the licensee would have to perform this estimate or only that the licensee must retain the information necessary to perform an estimate of public dose.

NIA recommends this ambiguity be resolved by requiring reports to meet the NRC stated intent to better inform the public about radiological doses identified from monitoring. The NRC states that the purpose of these changes is to add a process that conforms to the framework being proposed in this rulemaking for the monitoring and control of radiological effluents. NIA recommends NRC require reasonable estimates of public dose rather than continuing to focus on requiring licensees to estimate a hypothetical maximum dose. The reporting requirements

should be revised to explicitly require public dose estimates at reasonable compliance points. To achieve the NRC intent to better inform the public, NIA recommends clarifying that licensees should report reasonable dose estimates.

Conclusion

The proposed rule currently lacks the necessary guidance to provide a full understanding of how the graded approach would be implemented. NIA would prefer that ALARA to be mended, not ended, but could support the graded approach if the guidance clarifies the necessary actions at different thresholds. The federal government needs to create better alignment across the agencies that regulate and enforce radiation protection. NRC needs to ensure that public transparency and trust are maintained with a durable rule.

NIA appreciates the Commission's leadership on this issue and the opportunity to provide input. If you have any questions, please contact Miranda McGuire at mmcguire@nuclearinnovationalliance.org.

Sincerely,

Judi Greenwald
President & CEO
Nuclear Innovation Alliance