HPS Specialists in Radiation Protection

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Secretary
U.S. Nuclear Regulatory Commission Washington, DC 20555-0001
ATTN: Rulemakings and Adjudications Staff

Subject: Health Physics Society Comments on the Proposed Rule, *Reforming and Modernizing the NRC's Radiation Protection Framework*

Docket ID NRC-2025-1140 | RIN 3150-AL47 | 91 FR 43456 (July 15, 2026)

Dear Secretary:

The Health Physics Society (HPS) appreciates the opportunity to comment on the U.S. Nuclear Regulatory Commission's (NRC) proposed rule, Reforming and Modernizing the NRC's Radiation Protection Framework (91 FR 43456; July 15, 2026). The HPS is a nonprofit scientific and professional organization whose members specialize in radiation safety and protection across medicine, industry, academia, national laboratories, emergency response, and federal and state government. The comments below were developed by the HPS Government Relations Program based on input from HPS members. HPS submits these comments to assist the NRC in producing a final rule that is scientifically sound, implementable, and harmonized with the broader radiation protection framework in which it must operate.

HPS members implement radiation protection requirements issued by many United States authorities, including but not limited to: the NRC, the Environmental Protection Agency (EPA), Department of Energy (DOE), Department of Transportation (DOT), Department of War (DOW), Occupational Safety and Health Administration (OSHA), and state radiation control programs. The NRC's regulations, including those proposed for comment, are therefore one component of a larger regulatory picture, and the comments below reflect that whole-system perspective. Changes to Part 20 framework regulations will succeed or fail in practice depending on how well they harmonize with the other frameworks under which our members must also operate. The current framework of radiation protection in the United States is not aligned across the federal and state agencies, and HPS strongly recommends that any changes to the core radiation protection principles in the NRC regulations include harmonization and revision of regulations in each of the other agencies' regulatory oversight.

The HPS's recommendations below are grounded in its adopted position statements, available at https://hps.org/hpspublications/positions/.

Recommendations

Recommendation 1: Harmonize the revised framework across federal agencies, Agreement States, and international consensus — and coordinate future companion revisions where other agencies' regulations intersect.

The NRC should not finalize changes to core radiation protection principles in isolation. The NRC should coordinate with EPA, DOE, DOT, OSHA, and the Agreement States so that revised Part 20 requirements do not create dual standards, gaps, or contradictions for licensees regulated under multiple frameworks to enable national consistency. Radiation safety standards should remain consistent with the recommendations of the International Commission on Radiological Protection (ICRP), the National Council on Radiation Protection and Measurements (NCRP), and scientific consensus standards[1,2]. The NRC should also adopt SI units as the primary units to express radiological quantities throughout the revised Part 20[3].

Recommendation 2: Adopt a single, clearly governed dosimetry framework, and fully account for the cost and difficulty of the dosimetry transition.

The HPS supports the NRC's adoption of the modern dosimetry framework of ICRP Publication 103[4] and NCRP Report 180[5], including use of absorbed dose as the appropriate quantity for tissue effects. However, the NRC should not permit multiple concurrent dosimetry systems without clear governance or guidance. Allowing three acceptable systems will create ambiguity in dose comparison, record aggregation, inspection, and enforcement. The NRC should:

- Adopt a single modern dosimetry system, or at minimum require each licensee to use a single method per monitoring year with closely governed transitions;
- Prohibit summing doses computed under different dosimetry methods and prohibit selecting among methods to obtain the least limiting Annual Limit on Intake (ALI) or Derived Air Concentration (DAC) (§ 20.1004(e));
- Reflect realistic transition costs in the regulatory analysis — dosimeter processors, internal dosimetry codes, revised ALI/DAC tables, accreditation, records systems, and training — borne by licensees, dosimetry providers, and Agreement State programs; and
- Locate derived concentration values and similar technical tables in lower-tier, readily updatable documents so that scientific currency does not require full rulemaking.

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[1] Position Statement of the Health Physics Society: Compatibility in Radiation Safety Regulations, PS004-1, reaffirmed July 2007, https://hps.org/wp-content/uploads/2024/12/compatibility_ps004-1.pdf, accessed 25 August 2026.
[2] Position Statement of the Health Physics Society: Ionizing Radiation Safety Standards for the General Public, PS005-3, reaffirmed February 2009, https://hps.org/wp-content/uploads/2024/12/publicdose_ps005-3.pdf, accessed 25 August 2026.
[3] Position Statement of the Health Physics Society: Exclusive Use of SI Units to Express Radiological Quantities, PS025-0, adopted February 2012, https://hps.org/wp-content/uploads/2024/12/SIunits_ps025-0.pdf, accessed 25 August 2026.
[4] ICRP, 2007. The 2007 Recommendations of the International Commission on Radiological Protection. ICRP Publication 103. Ann. ICRP 37 (2-4), http://journals.sagepub.com/doi/pdf/10.1177/ANIB_37_2-4, accessed 25 July 2026.
[5] NCRP, 2018. Report No. 180 – Management of Exposure to Ionizing Radiation: Radiation Protection Guidance for the United States (2018).

Recommendation 3: Issue clear implementing guidance concurrent with the final rule, and use that guidance to center regulatory effort in proportion to actual radiological risk.

The proposed framework is intentionally more flexible than the current rule. Without clear implementing guidance, that flexibility will produce inconsistency among licensees, inspectors, and Agreement States, and could increase rather than decrease regulatory burden. The NRC should commit to issuing implementing guidance concurrent with any final rule. That guidance should establish how licensees are expected to use the graded approach to scale effort in proportion to radiological risk, and should equip licensees and regulators to communicate radiation risk clearly and comparatively. Disproportionate fear of low-level radiation carries its own measurable public health consequences such as deferred medical care, overly conservative emergency response protective actions, and fear-driven decision making, and the NRC's modernization effort should reduce, not amplify, those harms.

Recommendation 4: Correct technical definitions and characterizations in the rule text before finalization.

The NRC should revise the proposed definitions of "dosimetry method (or system)" and "radiation weighting factor" in § 20.1003 for technical accuracy consistent with ICRP Publication 103. Dosimetry systems characterize dose quantities; they do not "calculate biological effects." Refer to proposed definitions listed in the *Requested Actions on Specific Provisions* section of this correspondence.

Recommendation 5: Explicitly preserve the operational radiological control functions of existing radiation protection programs.

As a consequence of meeting the requirements to reduce doses to workers and members of the public as low as reasonably achievable (ALARA), existing radiation protection programs have implemented a number of operational quality assurance functions such as prospective dose trending, contamination control, effluent and release monitoring, and continuous improvement programs. These functions have contributed directly to the sound, protective performance of occupational radiation safety in the United States and have led to decades of decreasing doses to workers and members of the public. The positive attributes associated with these operational quality assurance components must not be lost in the transition to a determinate-limit or "graded approach" framework. The final rule and implementation guidance should preserve an explicit expectation for quality assurance and continuous improvement to support a strong radiation safety culture.

Recommendation 6: Explicitly acknowledge the scientific uncertainty at low doses.

The central policy questions in this rulemaking, the disposition of the ALARA requirement and the regulatory role of the linear no-threshold (LNT) model, divide the radiation protection community itself, and scientifically grounded practitioners hold defensible views on both sides. The HPS's adopted positions on radiation risk reflects the objective state of the science: the LNT hypothesis oversimplifies the relationship between dose and response[6]. At two open forums that HPS co-hosted with the National Council on Radiation Protection and Measurements (NCRP) in June 2025, attendees were asked to describe the dose response relationship below 100 mSv. A total of 441 responses characterized the relationship as "inconclusive" (173 of 236 responses at the first forum and 118 of 298 responses at the second

[6] Position Statement of the Health Physics Society: Radiation Risk in Perspective, PS010-4, revised February 2019, https://hps.org/wp-content/uploads/2024/12/radiationrisk.pdf, accessed 25 August 2026.

forum). An additional 183 of 298 responses at the second forum further characterized the relationship as “a complicated mess of biological response, but low to zero risk”[7].

The HPS cautions against numerical risk estimates for low doses. The most reliable studies of the effects of radiation exposure at the low levels received by occupational workers have not been able to detect adverse health effects associated with lifetime exposures smaller than approximately 100 mSv (above background)[8]. The HPS official position on radiological risk states, in part “estimates of health risk should be limited to individuals receiving a dose of 50 mSv in one year or a lifetime dose of 100 mSv above that received from natural sources” and “estimation of health risk associated with radiation doses that are of similar magnitude as those received from natural sources should be strictly qualitative and encompass a range of hypothetical health outcomes, including the possibility of no adverse health effects at such low levels”[9]. Accordingly, the NRC should state the uncertainty in radiological risk or health outcomes from occupational and environmental levels of radiation exposure explicitly in the published final rule, implementation guidance, or its supporting analyses[10].

Requested Actions on Specific Provisions

In addition to the recommendations above, the HPS requests the following actions on specific provisions of the proposed rule.

Provision	Requested action
§ 20.1003 Definitions	Revise the definitions of “dosimetry method (or system)” and “radiation weighting factor” for technical accuracy (see Recommendation 4). *Dosimetry method (or system)* means an approach for computing a dosimetric quantity that correlates to biological response from the corresponding radiation exposure. For stochastic effects this dose quantity should account for varying sensitivity by radiation type and tissue/organ. The method (or system) provides a repeatable, scientifically accepted approach which uses models that define reference individuals. *Radiation weighting factor* w_T is a dimensionless factor by which the organ or tissue absorbed dose is multiplied to reflect a higher or lower biological effectiveness of a given radiation type and energy.

[7] C.A. Wilson, E.M. Brackett, K.A. Higley, and E.A. Caffrey, Stakeholder Support for Regulatory Harmonization and Expanded Nuclear Power: Outcomes of HPS/NCRP Open Forums, Health Physics 130(5):598–614, 2026.
[8] Position Statement of the Health Physics Society: Occupational Radiation Safety Standards are Sound, PS013-1, revised July 2012, https://hps.org/wp-content/uploads/2024/12/occupationaldose_ps013-1.pdf, accessed 25 August 2026.
[9] Position of the Health Physics Society: Risk, https://hps.org/hpspublications/positions/, accessed 26 August 2026.
[10] Position Statement of the Health Physics Society: Uncertainty in Risk Assessment, PS008-2, revised February 2013, https://hps.org/wp-content/uploads/2024/12/riskassessment_ps008-2.pdf, accessed 25 August 2026.

Provision	Requested action
§ 20.1004(e)(1)(2) Use of multiple dosimetry methods	Require a single dosimetry method per licensee per monitoring year with closely governed transitions; prohibit summing doses computed under different methods during that year and prohibit method selection to obtain the least limiting ALI or DAC (see Recommendation 2).
§ 20.1101(d) Air emissions criterion	Before finalizing the revised criterion, the NRC should coordinate with EPA and explain whether the change affects EPA's determination that the NRC regulatory program, including its Agreement State compatibility and oversight mechanisms, protects public health with an ample margin of safety equivalent to that provided by 40 CFR part 61 Subpart I.
§ 20.1301(a)(2) Removal of the 2 mrem in any one hour public dose limit	Retain an hourly criterion or issue implementing guidance establishing an acceptable boundary-setting method before this requirement is removed. The 2 mrem in any one hour criterion is used operationally in the field, notably by industrial radiographers, to establish radiation area boundaries during exposures in environments where full dose calculations are impractical; removing it without a successor creates a practical vacuum for dose control in field operations.
§§ 20.1302(b), 20.1402 Public dose demonstration and decommissioning criteria	Evaluate whether sub-limit criteria (e.g., the 25 mrem/y TEDE unrestricted-use criterion) remain risk-informed and internally consistent with the 100 mrem/y public dose limit within the revised framework. Any revision should include a transparent cost-benefit basis (e.g., consistent with NUREG-1530) and remain consistent with the National Council of Radiation Protection and Measurements (NCRP) recommendations for dose limits for individual members of the public[11].
§ 20.1402 Agreement State compatibility	Designate the compatibility category for § 20.1402 and other revised public dose provisions to preserve national consistency in decommissioning and license termination criteria, avoiding state-by-state divergence that complicates multi-state operations. In particular, consider designating all provisions of § 20.1402 as Compatibility Category B to address current inconsistencies across the states relative to decommissioning dose criteria for unrestricted use determination.

[11] Position Statement of the Health Physics Society: Clearance of Materials Having Surface or Internal Radioactivity, PS012-2, reaffirmed July 2007, https://hps.org/wp-content/uploads/2024/12/clearance_ps012-2.pdf, accessed 26 August 2026.

Provision	Requested action
§ 20.2203(a)(2)(iv) Reportability of public dose	Clarify the public dose reportability evaluation and reconsider its multi-year tracking implication. As proposed, the provision implies that licensees must track exposures of individual members of the public over five years which could pose an unnecessarily significant administrative burden, and one that is unclear how to accomplish reliably. Clear implementation guidance should be published concurrent with the final rule.
Part 20 radiological quantity units	Adopt SI units as the primary units to express radiological quantities throughout the revised Part 20[3].
Appendix B and related tables	Remove derived concentration values and similar technical tables to readily updatable regulatory guidance documents so that corrections or changes based on scientific advancements do not require full rulemaking.

The Health Physics Society appreciates the NRC's consideration of these comments. As the scientific voice for radiation safety, the HPS stands ready to provide technical expertise as the NRC develops the final rule and its implementing guidance, particularly on dosimetry system transition, risk communication, and harmonization with other federal and state requirements.

Respectfully submitted,

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On behalf of the Health Physics Society

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