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Caylee Kenny
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
Docket ID NRC-2025-1140

Submitted via [Regulations.gov](https://www.regulations.gov)

Re: Committee to Bridge the Gap Comments on Docket ID NRC-2025-1140 — Proposed Rule, “Reforming and Modernizing the NRC’s Radiation Protection Framework,” RIN 3150-AL47

In May 2025, President Donald Trump issued a series of executive orders that, in part, require the US Nuclear Regulatory Commission (NRC) to consider dramatically weakening its radiation protection standard. Section 5(b) of the executive order formally titled “Ordering the Reform of the Nuclear Regulatory Commission” directs the NRC to issue a proposed “wholesale revision of its regulations and guidance documents,” including reconsideration of the agency’s “reliance on the linear no-threshold (LNT) model for radiation exposure.” The executive order correctly states that “The NRC utilizes safety models that posit there is no safe threshold of radiation exposure and that harm is directly proportional to the amount of exposure,” but incorrectly asserts that “Those models lack sound scientific basis and produce irrational results, such as requiring that nuclear plants protect against radiation below naturally occurring levels.” The order additionally directs NRC to “Adopt science-based radiation limits” and stipulates that “In reconsidering those limits, the NRC shall specifically consider adopting determinate radiation limits, and in doing so shall consult with the Department of Defense (DOD), the Department of Energy (DOE), and the Environmental Protection Agency.”

On July 15, 2026, the NRC published in the Federal Register (91 FR 43456) a proposed rule implementing section 5(b) of President Trump’s executive order. The proposed rule would revise numerous NRC regulations – most notably, 10 CFR 20, but many others in addition – “that govern its standards for protection against radiation.”¹

The NRC’s existing limits for annual radiation exposures are outdated and, given the current scientific understanding, seriously non-protective. The NRC’s public dose limit, 100 mrem per year, was set 35 years ago; the NRC’s worker dose limit, 5 rem per year, is two-thirds of a century old. Over that time, the science of health impacts from low-dose radiation exposure has advanced considerably, demonstrating that we have continued to underestimate the risks from

¹ Nuclear Regulatory Commission. [Federal Register](https://www.federalregister.gov) / Vol. 91, No. 134 July 15, 2026. p. 43456

radiation, which is more harmful than was previously understood. The NRC is supposed to base its radiation protection standards on the Biological Effects of Ionizing Radiation (BEIR) studies by the National Academies of Science, Engineering, and Medicine. BEIR VII's lifetime excess cancer risk estimates are 35% higher than BEIR V's, and BEIR V's are 3 to 18 times higher than BEIR III's.² When the NRC last revised its radiation regulations, in 1991, the agency acknowledged that BEIR V indicated higher radiation risks, but declined to tighten its limits accordingly.³

More recent high-quality, peer reviewed science (for instance, the INWORKS and EPI-CT studies) demonstrate even higher risks from low-dose radiation.⁴ BEIR VII risk coefficients (1.17×10^{-3} cancers per person-rem) indicate that NRC's public annual dose limit of 100 mrem would produce a cancer in one out of 100 people exposed at this level. This is an immense, unacceptable risk, and far higher than the 1-in-a-million cancer risk level that is standard in other federal statutes and regulations including, but not limited to, the Safe Drinking Water Act and the Comprehensive Environmental Response, Compensation, and Liability Act. As Ramona Trovato, then director of EPA's Office of Radiation and Indoor Air, put it, "radiation should not be treated as a privileged pollutant. You and I should not be exposed to higher risks from radiation sites than we should be from sites which had contained any other environmental pollutant."⁵ NRC's existing radiation protection standards were already too weak, treating radiation as a privileged pollutant at the expense of the health of Americans; NRC's proposed weakening of radiation standards makes the situation much worse.

Some of the key weakenings in NRC's proposed rule that would allow higher radiation exposures include:

- Allowing workers to be exposed to 10 rem in a year – double the current yearly occupational limit– as long as the total exposure over 5 years is 25 rem.⁶ If 100 workers worked for only 5 years under these conditions, 3 of them would get a cancer just from those 5 years of exposure; over a 35 year career, radiation exposure at the limit would cause 1 in 20 workers to get cancer.
- Lifting the current 500 mrem cap on applications for "alternative" dose limits for the general public, letting industry apply for, and NRC at its discretion grant, public dose

² National Research Council. [Health Effects of Exposure to Low Levels of Ionizing Radiation: BEIR V](#). Washington, DC: The National Academies Press, 1990. p. 176, table 4-4.; U.S. Environmental Protection Agency. [EPA Radiogenic Cancer Risk Models and Projections for the U.S. Population](#), April 2011. p. 3.

³ Peterson, Harold T. et al. Nuclear Regulatory Commission. [Overview of the Revised 10 CFR Part 20, "Standards for Protection Against Radiation."](#) p. 3.

⁴ Richardson, David B. et al. [Cancer mortality after low dose exposure to ionising radiation in workers in France, the United Kingdom, and the United States \(INWORKS\): cohort study](#). National Library of Medicine, 2022.; International Agency for the Research on Cancer. [EPI-CT: International pediatric CT scan study](#).

⁵ Trovato, Ramona. [Statement on the Nuclear Regulatory Commission's Rule on Radiological Criteria for License Termination](#) by Ramona Trovato, Office Director, EPA Office of Radiation and Indoor Air, April 21, 1997.

⁶ Nuclear Regulatory Commission. [Federal Register / Vol. 91, No. 134](#) July 15, 2026. p. 43472

limits of theoretically unlimited magnitude. The public dose limit is 100 mrem, and NRC already lets licensees apply for alternative public dose limits; what NRC is now proposing is to remove the 500 mrem cap, potentially allowing alternative public dose limits with no upper bound.⁷

- Greatly raising the limit on radioactivity in facility effluent – routine releases of radiation in air and water from nuclear reactors and other facilities – from the current 10 mrem limit up to 25 mrem. Worse, the *de facto* standard NRC proposes is to allow effluent radioactivity up to the public limit, 100 mrem, a 10x increase, requiring only that licensees submit to NRC paperwork considering (but not necessarily implementing) ways to reduce these effluent doses.⁸

The prevailing, best-supported scientific model for health impacts from low-dose radiation is the linear no-threshold (LNT) model. Even amid heavy political pressure from the Trump administration and nuclear industry to (as the executive order puts it) “reconsider” reliance on LNT, the scientific basis for LNT is so strong that NRC has correctly reaffirmed LNT, and will continue to base its regulations on LNT. LNT holds that any dose of radiation, even at the lowest levels, creates some commensurate risk of cancer, and that this risk goes up linearly with higher doses. One must remember, then, that every increase in levels of radiation exposure across the American public – and NRC’s proposed rulemaking would allow for many such increases – very directly will cause more people to get cancer.

Section 5(b) of the executive order—formally titled “Ordering the Reform of the Nuclear Regulatory Commission”—directs the NRC to issue a proposed “wholesale revision of its regulations and guidance documents,” including reconsideration of the agency’s “reliance on the linear no-threshold (LNT) model for radiation exposure.” The LNT model maintains that risk from radiation exposure is proportional to the dose: Even a tiny amount of radiation causes some small but real increased risk of cancer, and that risk goes up linearly as the dose increases.

While most Americans have doubtless never heard of the LNT model, it has been the bedrock of radiation exposure risk analysis for decades and forms the basis of public health protection from radiation. The LNT model is scientifically robust, supported by the longstanding and repeatedly affirmed determinations on low-dose radiation by the National Academies of Sciences, Engineering, and Medicine, virtually all international scientific bodies, the Environmental Protection Agency (EPA), and the NRC itself.⁹

⁷ Nuclear Regulatory Commission. [Federal Register / Vol. 91, No. 134](#) July 15, 2026. p. 43473

⁸ Nuclear Regulatory Commission. [Federal Register / Vol. 91, No. 134](#) July 15, 2026. p. 43471

⁹ National Research Council. [Beir VII: Health Risks from Exposure to Low Levels of Ionizing Radiation: Report In Brief](#). Washington, DC: The National Academies Press, 2006.; Clement C. et al. [Keeping the ICRP recommendations fit for purpose](#). IOP Science. December 1, 2021.; U.S. Environmental Protection Agency. [EPA Radiogenic Cancer Risk Models and Projections for the U.S. Population](#). April 2011.

Advocates of abandoning LNT have often asserted that low-dose radiation is harmless or even beneficial, and therefore, that the public health radiation limits should be hugely increased.¹⁰ In 2015, three petitions for rulemaking to the NRC proposed doing away with the LNT model and increasing allowable radiation exposures for everyone—including children and pregnant women—to 10 rem. One petition to the NRC went so far as to ask, “Why deprive the public of the benefits of low-dose radiation?” The NRC strongly rejected the petitions in 2021, citing the conclusions of numerous scientific bodies that “[c]onvincing evidence has not yet demonstrated the existence of a threshold.”¹¹

Current official radiation risk estimates—adopted by EPA from the National Academies’ BEIR VII study on the health risks from exposure to low levels of ionizing radiation—indicate that receiving 10 rem per year over a 70-year lifetime would result in about four out of every five people exposed getting a cancer they would not get otherwise.¹²

Despite what opponents of the LNT model claim, there is no threshold at 10 rem below which there is no measurable health harm. A substantial body of scientific work has demonstrated significant negative health impacts well below 10 rem. Beginning in the 1950s, pioneering Oxford researcher Alice Stewart demonstrated that a single fetal X-ray with a dose of 200 millirem (0.2 rem) was associated with a measurable increase in the risk of that child dying of cancer.¹³ The radiation establishment fought Stewart’s findings vigorously, but her research has long since been vindicated.¹⁴

More recently, a major study covering an international cohort of over 300,000 nuclear facility workers has found that annual doses well below 1 rem create measurable increases in the risk of developing a variety of cancers, and that, as NRC put it, “even tiny doses slightly boost the risk of leukemia.”¹⁵ A second massive study of nearly one million European children found that those who received a CT scan, at an average dose of 800 millirem (0.8 rem), suffered a measurable increase in their risk of getting cancer.¹⁶

¹⁰ James Conca. [Radiation And The Value Of A Human Life](#). Forbes. July 25, 2018.

¹¹ Nuclear Regulatory Commission. [Linear No-Threshold Model and Standards for Protection Against Radiation](#). Federal Register. August 17, 2021.

¹² U.S. Environmental Protection Agency. [EPA Radiogenic Cancer Risk Models and Projections for the U.S. Population](#). April 2011.

¹³ Stewart, Alice. [A Survey of Childhood Malignancies](#). The British Journal. June 28, 1958.; Stewart, Alice and Kneale G. W. [Radiation Dose Effects in Relation to Obstetric X-Rays and Childhood Cancers](#). The Lancet. June 06, 1970.

¹⁴ Gillam, Sarah. [Alice Stewart and the link between foetal x-rays and childhood cancer](#). Royal College of Physicians. December 21, 2018.

¹⁵ Richardson, David B. et al. [Cancer mortality after low dose exposure to ionising radiation in workers in France, the United Kingdom, and the United States \(INWORKS\): cohort study](#). National Library of Medicine, 2022.; Nuclear Regulatory Commission. [Linear No-Threshold Model and Standards for Protection Against Radiation](#). Federal Register. August 17, 2021.

¹⁶ Bosch de Basea, M., Thierry-Chef, I., Harbron, R. et al. [Risk of hematological malignancies from CT radiation exposure in children, adolescents and young adults](#). *Nat Med* **29**, 3111–3119 (2023).

NRC's Radiation Standards Were Already Too Weak – They Should Be Strengthened, Not Weakened

The US government has a long history of underestimating radiation risks.¹⁷ The more scientists have learned about low-dose radiation, the more their estimates of the risk per unit dose have tended to increase. Yet the NRC has not updated in step with the science.

The NRC protection limit for workers of 5 rem per year was set in the early 1960s and has not changed since, despite decades of increasing official estimates of radiation risk. The current best estimate, from the National Academies' BEIR VII, indicates that one out of every five workers receiving the NRC's allowable dose each year from ages 18 to 65 would develop a cancer. NRC's radiation exposure limits for the public have not been updated in 35 years. Despite a requirement to employ EPA's more conservative radiation risk standards, the NRC has long ignored it and instead continues to use 100 millirem per year.¹⁸

The NRC held a webinar in July 2025 to gather public feedback on implementing President Trump's executive order on abolishing the LNT model. Many presenters—including representatives from the National Council on Radiation Protection and the Union of Concerned Scientists—gave a vigorous defense of the LNT model, as did many of the comments from the public. Yet the NRC, despite itself having strongly reaffirmed LNT only 4 years ago, seemed to minimize low-dose radiation risks and suggested that all radiation cancer risk models be treated equally (including the long-discredited view that low-dose radiation has health benefits). More concerning, the NRC has put its thumb on the scale, giving special treatment to LNT opposition by posting among the general meeting materials a link to one presenter's paper, which suggests that an annual dose of 10 rem is acceptably safe.¹⁹

Contrast with Federal Radiation Protection Standards Issued by EPA Reveals How Non-Protective and Damaging to Public Health NRC's Proposed Rulemaking Is

The U.S. Environmental Protection Agency (EPA) implements the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) governing cleanup of the most contaminated sites in the country (Superfund sites). Under CERCLA, the target level of risk resulting from the pollution remaining when a site cleanup is finished is one person per million getting a cancer they would not otherwise have gotten. Under certain conditions, EPA allows this

¹⁷ Hirsch, Daniel. [Dan Hirsch Presents to National Academies on Low-Dose Radiation](#). Committee to Bridge the Gap. Presentation given on October 27, 2021.

¹⁸ Nuclear Regulatory Commission. [eCFR Title 10, Chapter 1, Part 20 – Standards for Protection Against Radiation](#). As amended August 26, 2026.

¹⁹ Nuclear Regulatory Commission. [Public Meeting Schedule: Meeting Details](#). See section titled “Related Documents,” specifically “Drawing the Line - Radiation Protection White Paper - BTI - ML25197A463.” July 2025.

risk level to be relaxed to about one person per ten thousand getting an excess cancer from site pollution.

The NRC's standards aren't intended for one-off catastrophes; the radiation limits NRC now proposes to revise are for routine releases from nuclear power plants and other licensed facilities. Radioactivity from catastrophic accidents, terrorist attacks, or similar is regulated by the *PAG Manual: Protective Action Guides and Planning Guidance for Radiological Incidents* (EPA-400/R-17/001), last issued by EPA in 2017.²⁰ The PAGs contain limits for radioactivity that are far higher, resulting in much greater public risk, than the radioactivity limits for EPA's Superfund program. This has generated substantial controversy within EPA over the years, particularly around the concern that PAG limits for radioactivity could be applied to Superfund sites, DOE sites, or other contaminated sites.²¹ EPA takes specific action in the PAG Manual to distinguish the PAGs from its authority under the Superfund program, stating the following in several footnotes: "This cleanup process does not rely on and does not affect any authority, including the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. 9601 et seq. and the National Contingency Plan (NCP), 40 CFR Part 300. This document expresses no view as to the availability of legal authority to implement this process in any particular situation." EPA's PAG Manual further clarifies how non-protective the agency considers the PAG levels to be, associating dose levels with risk: "Principle 4 (risk from the protective action must be less than that from the radiation risk avoided) supplies a lower bound of 0.03 rem on the dose at which evacuation of most members of the public is justified. The lower bound was derived from the risk of death from traffic accidents in emergency evacuations, using the factor of 0.0003 cancer deaths per person-rem."²² "Based on Principle 2, evacuation of the general population is not justified below 0.5 rem. This represents a risk of about 0.0002 of fatal cancer."²³

A March 21, 2019 dispute resolution decision letter from then-EPA Region 4 Acting Regional Administrator Walker further spelled out EPA's view on the non-protectiveness of NRC's radiation limits.²⁴ "[I]n 1997, EPA issued guidance for CERCLA sites with radioactive contamination which in part addresses cleanups at CERCLA sites where the NRC rule might otherwise be applicable or relevant and appropriate, and discusses how cleanups at these sites 'will typically have to be more stringent than required by the NRC dose limits to be protective.'

²⁰ U.S. Environmental Protection Agency. [PAG Manual: Protective Action Guides and Planning Guidance for Radiological Incidents](#). EPA-400/R-17/001. January 2017.

²¹ *Inside EPA*. [EPA E-mails Bolster Concerns Over Cleanup Levels In Draft Nuclear Guide](#). April 6, 2010.

²² U.S. Environmental Protection Agency. [PAG Manual: Protective Action Guides and Planning Guidance for Radiological Incidents](#). EPA-400/R-17/001. January 2017. Page 31.

²³ *Ibid.*

²⁴ Letter from Mary S. Walker, Acting Regional Administrator, U.S. EPA Region 4, to John A. Mullis II, Manager, DOE Oak Ridge Office of Environmental Management & David W. Salyers, Commissioner, Tennessee Department of Environment and Conservation (Mar. 21, 2019). Previously available online at https://www.tn.gov/content/dam/tn/environment/remediation/documents/oakridgereservation/emdf-documents/ffs-walker-management/73212_EM-%20WMF_EMDF_FFS_Formal_Dispute_EPA_03_21_2019.pdf

[citation in original] This guidance states that cleanup levels outside the CERCLA risk range (10^{-4} to 10^{-6} for carcinogens, which includes all radionuclides) generally should not be used to establish cleanup levels. An attachment to the memo states, ‘EPA has carefully reviewed the basis for the NRC dose levels and does not believe they are generally protective within the framework of CERCLA and the NCP. Simply put, NRC has provided, and EPA is aware of, ***no technical, policy, or legal rationale for treating radiation risks differently from other risks addressed under CERCLA*** and for allowing radiation risks so far beyond the bounds of the CERCLA risk range.’ [citation in original] EPA’s position has not changed since 1997. In 1998, EPA informed the NRC that ‘radioactive contamination is not singled out in [CERCLA] or in EPA regulations as a privileged pollutant for which EPA should allow exceedances above the carcinogenic risk range that was determined generally to be protective for other carcinogenic contaminants.’ [citation in original] In 2014 EPA updated this guidance to incorporate the science on estimating risk levels of radiation dose consistent with Federal Guidance 13 to state that ‘ARARs that are greater than 12 mrem/yr [equivalent to 3×10^{-4} carcinogenic risk] effective dose equivalent . . . are generally not considered sufficiently protective for developing cleanup levels under CERCLA at remedial sites.’ [citation in original] Accordingly, dose limits of 50 mrem/yr as set by the NRC regulation, [citation in original] and 100 mrem/yr as set by DOE Order, [citation in original] are not considered by EPA to be protective of human health and the environment. [citation in original]”²⁵ The guidance in this letter was later overturned by EPA Administrator Wheeler – but only partially, crucially not overturning the sections quoted here regarding EPA’s perspective on health-protective radiation doses.²⁶

Thus, the EPA has indicated in no uncertain terms that it does not consider the existing NRC dose limits to be protective of human health and the environment for the purposes of cleaning up radiation. Indeed, an annual dose above 12 mrem EDE is considered insufficient protection for a toxic site cleanup – far below the NRC’s existing public dose limit of 100 mrem, which NRC now proposes to relax even further. EPA indicates that NRC’s existing limits are already far outside of the acceptable risk range for protection of public health, allowing radiation doses that would cause many more cancers than the highest upper bound of public health protection allowed by EPA of three in ten thousand excess cancers. As we indicate elsewhere in this comment, NRC now proposes to relax its limits further to allow even higher radiation doses to the public, to workers, and to the environment. The federal government as a whole has a duty to protect the health of the public, including from hazards posed by ionizing radiation. There is no coherent reason why public protection under the Atomic Energy Act should allow such higher

²⁵ Letter from Mary S. Walker, Acting Regional Administrator, U.S. EPA Region 4, to John A. Mullis II, Manager, DOE Oak Ridge Office of Environmental Management & David W. Salyers, Commissioner, Tennessee Department of Environment and Conservation (Mar. 21, 2019), pages 9 - 10. Emphasis and citations in original. Previously available online at

https://www.tn.gov/content/dam/tn/environment/remediation/documents/oakridgereservation/emdf-documents/ffs-water-management/73212_EM-%20WMF_EMDF_FFS_Formal_Dispute_EPA_03_21_2019.pdf

²⁶ Openchowski, Charles. [The Oak Ridge Cleanup: Protecting the Public Or the Polluter?](#) *Environmental Law Reporter*, 53 ELR 10188. 2023.

risks than public protection under CERCLA. Why should people be exposed to higher levels of radiation, and all its attendant cancer and non-cancer health hazards, from living next to a nuclear power plant or other NRC-licensed facility than they would from living there after a post-meltdown cleanup? NRC now proposes to put innumerable many more people at risk; how can it possibly justify this?

The NRC, in its proposed rule, poses several questions for which it is particularly interested in receiving answers. The questions NRC poses are troubling, indicating that the agency is considering (and encouraging comment submission supporting) implementing even weaker, less protective radiation protection limits. For instance, NRC asks “should the NRC increase the annual public dose limit of 10 CFR 20.1301(a) within the controlled area?”²⁷ NRC does not ask the reverse question, whether it should decrease the annual public dose limit. The answer to this NRC question is **no**, NRC should not increase the annual public dose limit within the controlled area, because it would result in increased health harms to the public, as indicated elsewhere in our comment. NRC asks “If the public dose limit in 10 CFR 20.1301(a) were increased, what level would be appropriate and why?” We reject the premise of this question, as it inherently frames things in terms of increasing public dose limits when that is precisely what is needed for the protection of public health that is NRC’s mandate. The “disadvantages of such a change,” as NRC’s question continues, are that 1) such a change would run counter to the evolving scientific study of low-dose radiation, which has demonstrated that low-dose radiation is even riskier than was previously thought, and 2) such a change would result in increased cancers and other radiation-related health harms among the American public. NRC should align its radiation protection limits with 1) EPA’s public health-based radiation limits, which are far stricter and relatively reasonably protective, and 2) the international standard of 2 rem per year for workers.

The NRC’s proposed rule updating its radiation protection standards is at variance with the public health determinations of other federal agencies, resulting in relaxations of allowable radiation exposures that go in the opposite direction from the latest, high-quality science. If finalized, NRC’s proposed rule would allow large and unacceptable increases in radiation-related disease in the American public. NRC’s proposed rule is offensive, particularly given that this increase in radiation-related disease would result in the relatively small savings of \$9.53 million per year across the entire nuclear industry.²⁸

We acknowledge that NRC is under substantial political pressure from the Trump administration and from the nuclear industry. Yet the agency can, and should, do better. NRC should withdraw this proposed rule and revise it to do what the agency should have done 35 years ago when the scientific writing was already on the wall: strengthen, not weaken, its radiation protection standards.

²⁷ Nuclear Regulatory Commission. [Federal Register / Vol. 91, No. 134](#) July 15, 2026. p. 43477

²⁸ Nuclear Regulatory Commission. [Federal Register / Vol. 91, No. 134](#) July 15, 2026. p. 43457