

November 12, 2025

From: The below-signed organizations

To: The Commission, US Nuclear Regulatory Commission
Director Russel Vought, Office of Management and Budget
Rear Admiral Denise Hinton, Acting Surgeon General of the United States
Secretary Robert F Kennedy Jr, Health and Human Services, MAHA
Congressional Childhood Cancer Caucus, % TX Representative Michael McCaul
Jennifer Lockwood-Shabat, President, Women's Congressional Policy Institute
Senator Edward Markey

Cc: list below organizational signers

Dear Executives,

The Trump White House has issued numerous executive orders (EO), including one directing the Nuclear Regulatory Commission (NRC) to revise its long-standing radiation rule, Standards for Protection Against Radiation, found in the Code of Federal Regulations, Chapter 10, Part 20¹ and related regulations.² The title is apt—human and other living bodies do indeed require protection from radiation. Although Part 20 is already inadequate in many respects, it is still far better than the revisions now being proposed.³

Advisory bodies representing industry, and other government sectors that expose people to radiation daily, are pushing to relax current standards. NRC has not made a revision yet, and has been hearing that the Part 20 exposure (external only) should be taken from the existing 100 mrem a year, per license, to 500 mrem a year, and in view of some, even to 10 Rems, which would be 100 times the current level. This means anywhere from five times less protection to one hundred times less protection. At 10 Rems, four out of five adult males exposed over a 70-year lifetime would develop cancer⁴—a sentence to diminished health, and in many cases, premature death.

The vested interests also attack the basis of NRC regulation, the Linear No Threshold (LNT) model.⁵ A 2015 Petition for Rulemaking⁶ to the NRC proposed a 10 REM a year exposure limit for the general public and triggered a review of the LNT model by the NRC. The Petition was soundly rejected by NRC in 2021,⁷ affirming the scientific basis⁸ and global consensus by expert radiation, and many regulatory bodies⁹ that the linear dose-risk graph extends to zero, (no threshold) and is sound.

Now the EO calls for an additional weakening of protection by setting a threshold, or level below which radiation exposure would not “count” or be considered as to have not occurred. Part 20 is based on the well documented findings that even exposures so small that they cannot be measured may, sometimes, result in fatal cancer.¹⁰ The only way to reduce risk to zero requires zero radiation exposure.

Decades of published peer-reviewed research supports the Linear No-Threshold (LNT) model.¹¹ Key studies demonstrate that increased radiation exposure levels lead to increased disease, and that there are also catastrophic outcomes (fatal cancer for one) known as stochastic impacts that are not related solely to exposure level. Research demonstrating this includes study of the A-bomb survivors in the Lifespan Study (LSS)¹² as reported by many, including the National Academy of Science report, “Biological

Effects of Ionizing Radiation, VII Phase 2” (BEIR VII),¹³ and many studies of workers, including the new INWORKS dataset that includes nuclear workers from both European and US operations.¹⁴

Research teams continue to investigate radiation harm and have demonstrated support for the LNT model supporting both BEIR VII findings and the Hiroshima and Nagasaki survivor LSS, together and independently. Other studies are included in the endnotes.

The threshold idea was tried by NRC back in 1986, and expanded in 1990,¹⁵ with the Below Regulatory Concern (BRC) designation for radioactive waste. BRC allowed for radioactive waste, salvage items, contaminated materials and some practices to be declared non-radioactive and released for indiscriminate disposal and recycling—including into consumer products. The BRC concept was rejected by communities, waste management authorities, unions, counties, 14 states and in 1992, Congress directed NRC to revoke its own BRC policy.¹⁶

Part 20 bases its risk assessments on Reference Man,¹⁷ a model that represents a young adult male and fails to reflect the greater impacts to infants, children, and women—pregnant or not. Part 20 also focuses on external exposure while ignoring internal exposure¹⁸ from inhaled or ingested radioactive materials. Since the 1970s when Part 20 was established, newer research has shown that external radiation harms children more than adults and female bodies more than male bodies.¹⁹ Research on internal exposures, while showing that insoluble hot particles may result in much higher levels of exposure than previously thought, has not yet been sufficiently analyzed to discover if there are broad age-based or male/female differences in impact. This oversight needs correcting.

Existing standards should therefore be strengthened to account for these life-stage and gender disparities and for all pathways of exposure, not weakened. Radiation causes infertility, loss of pregnancy, birth complications and defects, as well as solid tumor cancer, leukemia, non-cancer outcomes including cardiovascular disease, increased incidence of autoimmune disease and ongoing new findings.

Executive Order 14300²⁰ would do the opposite. It would undermine public trust by falsely claiming that the NRC’s radiation risk models lack scientific basis, despite decades of peer-reviewed evidence and international consensus supporting the Linear No-Threshold (LNT) model. The order explicitly instructs the NRC to “reorganize to promote the expeditious processing of license applications and the adoption of innovative technology.” Executive orders do not have the power to require federal agencies to take actions that violate their governing statutes, nor to grant them powers and authorities that contradict those governing statutes. The NRC needs to stand up to the Executive Order’s marching orders to “promote” nuclear power—a mission outside its legal regulatory mandate under the Energy Reorganization Act of 1974²¹ and the concurrent amendments to the Atomic Energy Act.²² NRC, or any federal agency, should not favor industry propaganda asserting that some radiation is safe over science-based protection of the public. This is a deliberate subversion of science and public health in favor of corporate interests.

The undersigned organizations advocate for stronger, science-based radiation protections that:

- * Center standards on the life stages most impacted by radiation—gestation and early childhood—thereby improving protection for everyone;²³

- * Base exposure limits on female physiology, which is more affected by radiation;²⁴

- * Include internal exposure from contaminated air, food, and water in overall exposure limits;²⁵

- * Use empirical data to reform inadequate internal-dose models;²⁶

* Guarantee public access to real-time radiation monitoring of radioactive emissions and waste at all licensed sites; and

* Develop updated risk models acknowledging that no radiation dose is harmless and focusing protection on those most at risk, including communities targeted because of socio-economic factors including race, and language barriers placing them at higher risk for living near nuclear development and waste disposal.

As radioactive emissions accumulate in the environment, radiation exposure is intensifying and affecting all living things.²⁷ The NRC's own cancer-risk estimates,²⁸ based on 1970s data, underestimate harm by nearly a factor of three, even for adult males.²⁹ Contemporary research shows that radiation's impact is far greater on females, children, and fetuses—the most at-risk postnatal group being girls from birth to age five. A truly protective framework would replace Reference Man with a lifecycle model.³⁰

Accepting weaker radiation protections amounts to accepting an ever-increasing level of avoidable human disease and suffering. It is not too late for the NRC to uphold genuine family values—those that prioritize the health of children and future generations—by resisting efforts to trade human safety for nuclear industry expansion.

With shared concern for our future,

Beyond Nuclear, Takoma Park, Maryland

Nuclear Information and Resource Service, Mt. Rainier, Maryland

Physicians for Social Responsibility, Washington, DC

Sierra Club, National

Generational Radiation Impact Project, Asheville, North Carolina*

Southwest Research and Information Center, Albuquerque, New Mexico

Nuclear Energy Information Service, Chicago, Illinois

Nuclear Watch South, Atlanta, Georgia

ECAN-Erwin Citizens Awareness Network, Inc., Jonesborough, Tennessee

The Clinch Coalition, Wise, Virginia

Appalachian Peace Education Center, Abingdon, Virginia

Nuclear free Northwest, Seattle, Washington

Montana Environmental Information Center, Helena, Montana

Snake River Alliance, Boise, Idaho

Healthy Environment Alliance of Utah (HEAL Utah) Salt Lake City, Utah

Ohio Nuclear Free Network, Statewide, Ohio

Rocky Mountain Peace and Justice Center, Boulder, Colorado

Greenaction for Health and Environmental Justice San Francisco, California
San Clemente Green, San Clemente, California
San Luis Obispo Mothers for Peace, California
Ecological Options Network, Bolinas, California
Redwood Alliance, Arcata, California
Alliance for Nuclear Responsibility, San Luis Obispo, California
Citizens Awareness Network, Shelburne Falls, Massachusetts
Citizens' Resistance At Fermi Two (CRAFT), Redford, Michigan
Western North Carolina Physicians for Social Responsibility, Asheville, North Carolina
Reject Raytheon AVL, Asheville, North Carolina
Stop the Algonquin Pipeline Expansion, New York, Connecticut, Rhode Island, and Massachusetts
Physicians for Social Responsibility - New York (New York, New York)
Alliance for Nuclear-Free NY, Albany, New York
Manhattan Project for a Nuclear-Free World, New York, NY
Indian Point Safe Energy Project, New York
LEAF of Hudson Valley, Nanuet, New York
Hudson Valley Climate Science and Solutions Cottekill, New York
Safe Energy Rights Group, Peekskill, New York
Rockland Coalition to End the New Jim Crow, Environmental Committee, Rockland, New York
Council on Intelligent Energy & Conservation Policy (CIECP), New York, New York
Northwest Environmental Advocates, Portland, Oregon
Oregon Conservancy Foundation, Boring, Oregon
Columbia Riverkeeper, Hood River, Oregon
Alliance for Democracy, Portland, Oregon

Cc: American Medical Association AMA Plaza
National Association of Medical Professionals
American Academy of Pediatrics
Society for Pediatric Research
National Academy of Sciences

Volker Türk, UN High Commissioner for Human Rights

Union of Concerned Scientists

Public Citizen

* Correspondence may be sent to Generational Radiation Impact Project, 30 Westgate Parkway # 362, Asheville, North Carolina 28806

ENDNOTES

¹ US Federal Code of Regulations. 2025 [1991]. “Standards for Protections Against Radiation,” chp. 10, part 20 (10cfr20). <https://www.ecfr.gov/current/title-10/chapter-I/part-20>

² The ALARA policy is part of “Subpart B. 20.1101 Radiation protection programs” of the US Federal Code of Regulations, Standards for Protection Against Radiation. See US Federal Code of Regulations 2025 [1991]. “Standards for Protections Against Radiation,” chp. 10, part 20 (10cfr20). <https://www.ecfr.gov/current/title-10/chapter-I/part-20>

³ There are many entities seeking to advise NRC in meeting EO 14300. One source that is regularly cited by many is the US Department of Energy’s Office of Nuclear Energy report, published by Idaho National Laboratory, in July 2025. See: Wagner, John C. et al. 2025. “Reevaluation of Radiation Protection Standards for Workers and the Public Based on Current Scientific Evidence,” Idaho National Laboratory, INL/RPT-25-85463. https://inl.gov/content/uploads/2023/07/INLRPT-25-85463_Reevaluation-of-Radiation-Protection-Standards-R0-Final.pdf

⁴ Hirsch, Daniel, Haakon Williams, and Cameron Kuta. 2025 (15 October). “President Trump’s Radical Attack on Radiation Safety,” *The Bulletin of Atomic Scientists*. <https://thebulletin.org/2025/10/president-trumps-radical-attack-on-radiation-safety/>

⁵ There are many fine examples of publications illustrating the strong empirical foundations of the LNT model for radiation impact. On 16 July 2025, the NRC Lead Staff responding to EO 14300 invited speakers to present at a Stakeholder Meeting. Three speakers eloquently defended the LNT Model, Dan Hirsch, Dr. Edwin Lyman, and Dr. David Richardson. See:

Hirsch, Daniel. 2025 (16 July). “Implications of Weakening Radiation Protection Standards.” NRC Public Meeting on EO 14300. [https://www.philrutherford.com/Radiation_Risk/NRC/EO14300_5\(b\)/2_Hirsch/ML25195A167.pdf](https://www.philrutherford.com/Radiation_Risk/NRC/EO14300_5(b)/2_Hirsch/ML25195A167.pdf)

Lyman, Edwin. 2025 (16 July). “UCS Perspectives on the Regulatory Application of LNT and ALARA.” NRC Public Meeting on EO 14300. <https://www.nrc.gov/docs/ML2519/ML25195A114.pdf>

Richardson, David. 2025 (16 July). “Epidemiological Studies of Low Dose/Low Dose Rate Exposures.” NRC Public Meeting on EO 14300. [https://www.philrutherford.com/Radiation_Risk/NRC/EO14300_5\(b\)/11_Richardson/ML25195A115.pdf](https://www.philrutherford.com/Radiation_Risk/NRC/EO14300_5(b)/11_Richardson/ML25195A115.pdf)

⁶ In 2015 three petitions for rulemaking were submitted to the US NRC, urging a huge relaxation in the permissible radiation exposure of the public and workers by rejecting the LNT model. See: Nuclear

Regulatory Commission. 2015. “Linear No-Threshold Model and Standards for Protection Against Radiation.” Docket ID: NRC-2015-0057, PRM-20-28,29,30. <https://www.regulations.gov/docket/NRC-2015-0057>

⁷ After extensive review, NRC rejected the three rulemaking petitions in a final action. See: Nuclear Regulatory Commission. 2021. “Petition for Rulemaking; Denial: Linear No-Threshold Model and Standards for Protection Against Radiation.” Document ID: NRC-2015-0057-0671. <https://www.regulations.gov/document/NRC-2015-0057-0671>. The matter is further discussed in: Wright, David A. 2021. “SECY-19-0008: Denial of Petitions for Rulemaking Regarding Linear No-Threshold Model and Standards for Protection Against Radiation (PRM-20-28, PRM-20-29, AND PRM-20-30)” <https://www.nrc.gov/docs/ML2118/ML21187A117.pdf>

⁸ The science supporting the LNT is extensive. See, e.g., the following small sampling of research:

Berrington de Gonzalez, A., et al. 2020. “Epidemiological Studies of Low-Dose Ionizing Radiation and Cancer: Rationale and Framework for the Monograph and Overview of Eligible Studies,” *JNCI Monographs*, 56 (July 2020): 97–113. <https://doi.org/10.1093/jncimonographs/lgaa009>

Hauptmann, M., et al. 2020. “Epidemiological Studies of Low-Dose Ionizing Radiation and Cancer: Summary Bias Assessment and Meta-Analysis,” *JNCI Monographs*, 56 (July 2020): 188–200. <https://doi.org/10.1093/jncimonographs/lgaa010>

Richardson, D., et al. 2023. “Cancer Mortality After Low Dose Exposure to Ionising Radiation in Workers in France, the United Kingdom, and the United States (INWORKS): Cohort Study. *BMJ* 382: e074520. <https://doi.org/10.1136/bmj-2022-074520>

Richardson, D., et al. 2015. “Risk of Cancer from Occupational Exposure to Ionising Radiation: Retrospective Cohort Study of Workers in France, the United Kingdom, and the United States (INWORKS). *BMJ* 351: h5359. <https://doi.org/10.1136/bmj.h5359>

See also: Fairlie, Ian, and Cindy Folkers. 2024. *The Scientists Who Alerted Us to the Dangers of Radiation*. Cambridge: Ethics Press. <https://ethicspress.com/products/the-scientists-who-alerted-us-to-the-dangers-of-radiation>

⁹ After the issuance of EO 14300, several articles have been published in support of LNT by members of international radiation protection bodies. See, e.g., Rühm, Werner et al. 2025. “Essentials of the System of Radiological Protection,” *Journal of Radiological Protection* 45(3): 033002. <https://iopscience.iop.org/article/10.1088/1361-6498/ae02a2>. See also: Hamakoa, Yutaka. 2021. “LNT Model is Not an ‘Assumption’: Re-Analysis of Epidemiological Data Empirically Supports LNT.” ICRP: The Future of Radiological Protection. <https://www.icrp.org/page.asp?id=542>

¹⁰ The ICRP defines stochastic effects as “an effect resulting from damage in a single cell, such as cancer and heritable effects. The frequency of the event, but not its severity, increases with an increase in the dose. For protection purposes, it is assumed that there is no threshold dose.” See e.g. ICRP, Task Group 123. 2025. “Classification of Harmful Radiation-induced Effects on Human Health for Radiological Protection Purposes.” https://www.icrp.org/icrp_group.asp?id=194

¹¹ The most famous source of empirical support for the LNT is a report known as BEIR VII. See: NAS-NRC. 2006. “Health Risks from Exposure to Low Levels of Ionizing Radiation: BEIR VII – Phase 2,” Committee to Assess Health Risks from Exposure to Low Levels of Ionizing Radiation, Board

on Radiation Effects Research, National Research Council of the National Academies. National Academies Press. <http://www.nap.edu/openbook.php?isbn=030909156X>.

¹² A comprehensive report on the LSS is the core of BEIR VII. See note 11.

¹³ See note 11.

¹⁴ INWORKS is a new dataset including evidence collected from nuclear workers in multiple European countries and the US. For a French report on new findings as of September 2024 see: ASNR. 2024 (16 September). “INWORKS Epidemiological Study: New Results on the Risk of Leukemia, Lymphoma and Multiple Myeloma Among Nuclear Industry Workers,” Nuclear Safety and Radiation Protection Authority (ANSR). <https://research-assessment.asnr.fr/news/inworks-epidemiological-study-new-results-risk-leukemia-lymphoma-and-multiple-myeloma-among#:~:text=New%20research%20results%20recently%20published,medical%20exposure%2C%20etc> See also Richardson, D., et al. 2025. “Site-specific Cancer Mortality After Low-level Exposure to Ionizing Radiation: Findings from an Update of the International Nuclear Workers Study (INWORKS).” *American Journal of Epidemiology* 194(5):1285–1294. <https://doi.org/10.1093/aje/kwae256>

¹⁵ US NRC Policy Statement. 1990 (3 July). Below Regulatory Concern, Federal Register, Vol 55, No. 128: 27522—27537. https://archives.federalregister.gov/issue_slice/1990/7/3/27519-27535.pdf#page=4

¹⁶ The Energy Policy Act of 1992 was originated under the George Bush Sr Administration and passed into law as Public Law 102-486. Title XXIX, Section 2901, amending The Atomic Energy Act by adding Section 276, State Authority to Regulate Radiation Below Level of Regulatory Concern of Nuclear Regulatory Commission, and in subsequent section (b), expressly revoking the specific Below Regulatory Concern Policy Statements (1986 and 1990) listing Federal Register Notices at 42 USC 2023.

¹⁷ “Reference man is defined as being between 20–30 years of age, weighing 70 kg (~154 lb), is 170 cm (~5’7”) in height, and lives in a climate with an average temperature of from 10° to 20° C. He is a Caucasian and is of Western European or North American in habitat and custom.” For official definition and more information see: Snyder, W. S., M. J. Cook, E. S. Nasset, L. R. Karhausen, G. Parry Howells, and I. H. Tipton. 1975. “Report of the Task Group on Reference Man. International Commission on Radiological Protection,” Publication no. 23, adopted October 1974. Pergamon Press.

¹⁸ While there are limits expressed in units for internal exposure evaluation, the general, annual limits to the public per “20.1301 Dose Limits for Individual Members of the Public” in Part 20, state “external exposure.”

¹⁹ See note 8. See also: Nichols, Amanda M. and Mary Olson. 2024. Gender and Ionizing Radiation Towards a New Research Agenda Addressing Disproportionate Harm. United Nations Institute for Disarmament Research. https://unidir.org/wp-content/uploads/2024/11/Gender_and_ionizing_radiation_web.pdf

²⁰ Executive Order, 14300 of 23 May 2025, Ordering the Reform of the Nuclear Regulatory Commission was printed in the Federal Register Vol. 90, No. 102 / Thursday, 29 May 2025 / Presidential Documents, page 22587—22590. <https://www.federalregister.gov/documents/2025/05/29/2025-09798/ordering-the-reform-of-the-nuclear-regulatory-commission>

²¹ The Atomic Energy Commission (AEC) was formed on 1 August 1946 and later it was determined that the nuclear industry required an independent regulator. In 1974 Energy Reorganization Act retired the AEC by splitting it into nuclear energy and weapons development at the US DOE and commercial

industry regulation at US NRC. Legislative history and the text of Public Law 93-438 of 11 October 1974 are available at: <https://www.congress.gov/bill/93rd-congress/house-bill/11510/text>

²² The 1974 retirement also amended the Atomic Energy Act. See: <https://www.govinfo.gov/content/pkg/COMPS-1630/pdf/COMPS-1630.pdf> (as amended through 2024).

²³ Folkers, C. and L. P. Gunter. 2022. “Radioactive Releases from the Nuclear Power Sector and Implications for Child Health,” *BMJ Paediatrics Open* 6(1): e001326. <https://doi.org/10.1136/bmjpo-2021-001326>.

Folkers, C. 2021. “Disproportionate Impacts of Radiation Exposure on Women, Children, and Pregnancy: Taking Back our Narrative,” *Journal of the History of Biology* 54: 31–66. <https://doi.org/10.1007/s10739-021-09630-z>.

See also: Makhijani, Arjun, et al. 2006. “Science for the Vulnerable: Setting Radiation and Multiple Exposure Environmental Health Standards to Protect Those Most at Risk,” Institute for Energy and Environmental Research. <https://ieer.org/wp/wp-content/uploads/2006/10/Science-for-the-Vulnerable.pdf>.

²⁴ Nichols, Amanda M. and Mary Olson. 2024. Gender and Ionizing Radiation Towards a New Research Agenda Addressing Disproportionate Harm. United Nations Institute for Disarmament Research. https://unidir.org/wp-content/uploads/2024/11/Gender_and_ionizing_radiation_web.pdf

²⁵ Kaltofen, M., and P. Plato. 2024. “Absorbed Dose Rates and Biological Consequences of Discrete Alpha-emitting Particles Embedded in Tissue.” *Applied Radiation and Isotopes* 210: 111355. <https://doi.org/10.1016/j.apradiso.2024.111355>

²⁶ See note 25 as an example of the need for a new dosimetry and the vast inadequacy of current evaluation of impacts from persistent, non-soluble radioactive particles lodged inside the body.

²⁷ Circa 1993, Dr Judith Johnsrud, nuclear intervenor and geographer, gave a keynote address positing that radiation and persistent radioactivity in our environment should be described as thick, or thin, as it is correctly described as a field that has density.

²⁸ See: Table I, of US NRC Policy Statement 1990, p. 27531. US NRC Policy Statement. 1990 (3 July). Below Regulatory Concern, Federal Register, Vol 55, No. 128: 27522—27537. https://archives.federalregister.gov/issue_slice/1990/7/3/27519-27535.pdf#page=4

²⁹ This value is derived from comparing the dose-response risk of fatal cancer table NRC includes in its 1990 Expanded BRC Policy Statement (see note 28) and the values reported by Hirsch et al. (see note 4) for research-based risk of cancer from radiation exposure.

³⁰ A lifecycle model would not only consider a single life-stage or age-cohort (population model). While population data could inform a lifecycle approach, each life-stage must be informed by the life-stages before, and exposure and cumulative damage tracked forward into the mature aging stages. It is not clear that such a model exists, although there is some resonance with the idea of “considering the seventh generation” in any decision. Our best and brightest need to tackle this one.