



REFORMING AND MODERNIZING THE NRC'S RADIATION PROTECTION FRAMEWORK

RESPONSE TO NRC'S PROPOSED RULE

The following comments, including prior referenced material are in response to NRC's recent proposed rule¹ addressing Section 5(b) of Executive Order 14300,² "Ordering the Reform of the Nuclear Regulatory Commission," specifically related to the use of the "linear no-threshold (LNT)" theory of radiation risk, and the associated "as low as reasonably achievable (ALARA)" policy.

Subsequent to issuance of EO 14300, the Health Physics Society (HPS) in partnership with the National Council on Radiation Protection and Measurements (NCRP) conducted two webinars on the implications of EO 14300, in which they solicited comments from membership. My comments³ were submitted to HPS and NCRP on June 18, 2025,⁴ and were subsequently submitted to the NRC on July 29, 2025.⁵ These prior comments on EO 14300 still stand and are submitted again as background to the writer's views on LNT. Subsequent comments below address the specifics of NRC's response to EO 14300.

ALARA

NRC is proposing to eliminate the ALARA policy. In so doing, it is following the example of DOE.

¹ Federal Register, "Reforming and Modernizing the NRC's Radiation Protection Framework." Proposed Rule. July 15, 2026.

<https://www.federalregister.gov/documents/2026/07/15/2026-14208/reforming-and-modernizing-the-nrcs-radiation-protection-framework>

² Federal Register, "Ordering Reform of the Nuclear Regulatory Commission." Executive Order 14300. May 23, 2025.

<https://www.federalregister.gov/documents/2025/05/29/2025-09798/ordering-the-reform-of-the-nuclear-regulatory-commission>

³ Rutherford. "Health Physics Society Webinars. Nuclear Executive Orders with Focus on LNT. Comments Submitted to HPS and NCRP." June 18, 2025.

https://philrutherford.com/Radiation_Risk/HPS_EO_Webinar_Comments.pdf

⁴ Rutherford. Email to HPS/NCRP. "Comments on the HPS and NCRP Webinars and Nuclear Regulation." July 18, 2025.

https://philrutherford.com/Radiation_Risk/2025-06-18_Comments_to_HPS_NCRP_on_LNT.pdf

⁵ Rutherford. Email to NRC. "July 16, 2025, Virtual Hearing on Executive Order 14300, LNT and ALARA." July 29, 2025.

https://philrutherford.com/Radiation_Risk/2025-07-29_Comments_to_NRC_14300_LNT_ALARA.pdf



DOE's initial specific response to EO 14300 Section 5(b) has been the removal of ALARA from DOE orders and directives. An internal memo dated January 9, 2026, and titled "Action: Approval to Eliminate ALARA from All Department of Energy (DOE) Directives and Regulations" was initialed as approved by Energy Secretary, Chris Wright.⁶ Cited in the DOE memo was a DOE-funded, Idaho National Laboratory (INL) report⁷ recommending elimination of ALARA.

The NRC likewise, proposes eliminating the requirement for ALARA from all NRC regulations, recognizing that judgement of "reasonable" differs among individuals. Nevertheless, NRC proposes to replace ALARA with a "graded approach to dose management" below existing occupational and public dose limits. Is NRC just changing terminology? Time will tell.

As an example, the proposed change to the License Termination Rule, 10 CFR 20.1402 from ...

A site will be considered acceptable for unrestricted use if the residual radioactivity that is distinguishable from background radiation results in a TEDE to an average member of the critical group that does not exceed 25 mrem (0.25 mSv) per year, including that from groundwater sources of drinking water, and that the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA). Determination of the levels which are ALARA must take into account consideration of any detriments, such as deaths from transportation accidents, expected to potentially result from decontamination and waste disposal.

... to ...

A site will be considered acceptable for unrestricted use if the residual radioactivity that is distinguishable from background radiation results in a TEDE to the average member of the critical group that does not exceed 25 mrem (0.25 mSv) per year, including that from groundwater sources of drinking water, and, consistent with § 20.1406(c), the residual radioactivity has been reduced to levels where further reductions would not be justified when considering any detriments, such as traffic accidents, expected to potentially result from decontamination and waste disposal.

... does not appear to be functionally different, other than removal of the term, ALARA.

⁶ DOE. Memorandum for the Secretary. EXEC-2025-013258. Approval to Eliminate ALARA from All Department of Energy (DOE) Directives and Regulations. January 9, 2026.
https://philrutherford.com/EO_14300/DOE_ALARA_Memo.pdf

⁷ INL. Reevaluation of Radiation Protection Standards for Workers and the Public Based on Current Scientific Evidence. July 2025.
https://inl.gov/content/uploads/2023/07/INLRPT-25-85463_Reevaluation-of-Radiation-Protection-Standards-R0-Final.pdf



LNT

Perhaps understandably, NRC was unwilling to throw out LNT, preferring to sit on the fence, like the BEIR VII Committee, 20 years ago, and make the politically correct decision to maintain the status quo.

De Minimus

The “accepted” amount and variability in natural background radiation in the U.S. has a range of 100 to 500 mrem/y with an average of 300 mrem/y. That is 300 +/- 200 mrem/y for non-regulated exposures. The term “accepted” used here, means that the public, government agencies and regulators, and the medical profession, accepts those moderately high, and variable doses because they can do little to minimize them, unless they choose to live at sea level, never fly, keep one’s windows open all the time, and avoid all foods containing potassium-40, i.e. starve.

Given the wide range of un-regulated background radiation exposures, provides the opportunity to select a rational “de minimus” level of radiation exposure below which regulation makes no sense and is unnecessary. The level of conservatism in this choice of “de minimus” of course is open to judgment, in the same way that ALARA is open to judgment. The writer proposes that 10% of the average background exposure, or 30 mrem/y, is sufficiently conservative. It is less than the background variability. It is less than the public dose limit of 100 mrem/y. It marginally exceeds the NRC LTR of 25 mrem/y which NUREG-1727, Appendix D⁸ has shown to be already ALARA. It exceeds the “safe” cleanup levels of 25 mrem/y and 15 mrem/y over which the NRC and EPA squabbled in the late 1990s.⁹

The NRC’s proposed rule would benefit from including a choice of, and rationale for, a “de minimus” dose, below which regulation is unnecessary.

Radiation Dose, Risk and Cleanup Standards

A key area which would benefit from NRC’s new radiation protection framework is decommissioning cleanup standards.

What are radiation cleanup standards and how have they changed over the years? What is “reasonable” in ALARA? What is the linear no-threshold (LNT) theory of radiation risk? What are the illogical consequences of LNT? How clean is clean? How low is low? How safe is safe?

⁸ NUREG-1727. “NMSS Decommissioning Standard Review Plan.” Appendix D, ALARA Analysis. September 2000.
<https://www.nrc.gov/docs/ML0037/ML003761169.pdf>

⁹ EPA. OSWER 9200.4-18. Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination.” August 22, 1997.
https://philrutherford.com/Radiation_Cleanup_Standards/OSWER_9200-4-18.pdf



Answers to these and other questions may be found in “Radiation Dose, Risk and Cleanup Standards.”¹⁰

¹⁰ Rutherford. “Radiation Dose, Risk and Cleanup Standards.” May 18, 2026.

https://philrutherford.com/SSFL/Cleanup_Standards/Radiation_Dose_Risk_and_Cleanup_Standards.pdf