Department of Energy
Washington, DC 20585

MEMORANDUM FOR THE SECRETARY

THROUGH: JAMES P. DANLY
DEPUTY SECRETARY

FROM: DARIO GIL
UNDER SECRETARY FOR SCIENCE

BRANDON M. WILLIAMS
UNDER SECRETARY FOR NUCLEAR SECURITY
ADMINISTRATOR, NNSA

SUBJECT: **ACTION:** Approval to Eliminate ALARA from All Department of Energy (DOE) Directives and Regulations

ISSUE: Whether to approve the removal of the "as low as reasonably achievable" (ALARA) principle from all DOE directives and regulations, including DOE Order 458.1, NE Order 458.1, and 10 CFR 835.

DETAILS: DOE's radiation protection rules currently require not only that radiation exposures be kept below prescribed limits but further require that such exposures be kept "as low as reasonably achievable." This ALARA principle is embedded in DOE Order 458.1, *Radiation Protection of the Public and the Environment*, NE Order 458.1, *Radiation Protection of the Public*, and 10 CFR 835, *Occupational Radiation Protection.*

In Executive Order (EO) 14301 (Reforming Nuclear Reactor Testing at DOE), the President concluded that the Nation's "proud history of [nuclear] innovation has succumbed to overregulated complacency." In EO 14300 ("Ordering the Reform of the Nuclear Regulatory Commission"), the President concluded that the principles and risk calculus underpinning current federal radiation protection rules are flawed and require revision. Specifically, Section 1 of EO 14300 criticized ALARA and the linear no-threshold (LNT) model on which it is based as follows: "Those models lack sound scientific basis and produce irrational results, such as requiring that nuclear plants protect against radiation below naturally occurring levels. A myopic policy of minimizing even trivial risks ignores the reality that substitute forms of energy production also carry risk, such as pollution with potentially deleterious health effects."

At the direction of the DOE Office of Nuclear Energy, Idaho National Laboratory (INL) published a report (INL Report) in July 2025 that comprehensively reviewed and summarized available scientific literature on radiation exposure effects. The INL Rreport concluded: "The balance of available scientific evidence indicates that annual dose rates of 5,000 mrem or less have not been shown to result in detectable increases in adverse

health outcomes across diverse human populations and exposure scenarios. Furthermore, substantial evidence suggests that even 10,000 mrem/year may maintain a reasonable safety margin based on available epidemiological and radiobiological data."[1]

The INL Report further concluded that "[c]urrent radiation protection frameworks, predicated on the LNT model and implementing ALARA principles below regulatory limits, appear inconsistent with this body of evidence and consequently impose excessive economic and operational burdens without corresponding health benefits."[2] Those burdens "significantly affect nuclear power and facility economics through specialized personnel needs, extensive monitoring equipment, protective infrastructure, and administrative compliance costs … [and have] significant cost and schedule implications for decommissioning commercial nuclear power plants, nuclear-waste disposal, and nuclear-site cleanup, as well as medical and industrial applications of nuclear technologies."[3] For example, with respect to nuclear power generation, "[w]orker-rotation policies implemented to limit individual radiation doses increase staffing requirements for certain maintenance operations. Additional outage time dedicated to dose management can substantially impact plant economics through loss of generation revenue. These operational constraints, while designed to enhance safety, contribute to the overall economic challenges facing nuclear power generation."[4] Current frameworks also contribute to "disproportionate [public] fear that negatively impacts adoption of beneficial nuclear technologies and drives overly conservative regulatory approaches."[5] DOE's decades of nuclear facility operating experience confirms that DOE's mission to foster nuclear innovation and advanced nuclear technologies could be met more effectively if the current radiation protection framework were reformed.[6] Eliminating ALARA is a significant reform that would reduce the economic and operational burdens on nuclear energy while aligning with available scientific evidence.

POLICY IMPACT: If approved, this action would remove the ALARA principle from all DOE directives and regulations, including DOE Order 458.1, *Radiation Protection of the Public and the Environment*, NE Order 458.1, *Radiation Protection of the Public*, and, upon completion of the rulemaking process, 10 CFR 835, *Occupational Radiation Protection.*

URGENCY: High. The nuclear companies participating in DOE nuclear pilot programs (including Reactor and Fuel Line) need to comply with the NE-specific rules and radiation issues are a key part of those rules. Finally, DOE is actively discussing radiation reform with other agencies including NRC and a decision here is needed to advance those discussions.

---

[1] John Wagner et al. "Reevaluation of Radiation Protection Standards for Workers and the Public Based on Current Scientific Evidence." July 2025 (INL/RPT-25-85463), at 35.
[2] *Id.*
[3] *Id.* at ES-2.
[4] *Id.* at 30.
[5] *Id.* at 5.
[6] *Id.* at ES-2.

RECOMMENDATION: Approve the removal of the "as low as reasonably achievable" (ALARA) principle from all DOE directives and regulations, including DOE Order 458.1, NE Order 458.1, and 10 CFR 835.

APPROVE: ____ DISAPPROVE: ____ NEEDS DISCUSSION: ____ Date: _____