HPS Specialists in Radiation Protection

Health Physics Society Presentation to US NRC Public Meeting on Executive Order 14300 Section 5(b) - Reconsidering the NRC's Radiation Protection Framework

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About the Health Physics Society

Organization: An independent, 501(c)(6) nonprofit scientific organization chartered in 1956 not affiliated with any government or industrial organization or private entity.

Members: Radiation safety specialists serving academia, government, medicine, research and development, analytical services, consulting, and industry in all 50 states and the District of Columbia.

Mission: Excellence in the science, practice, communication, and application of radiation safety and protection.

HPS/NCRP Public Forum

Purpose: Two open forums (June 9-10, 2025) to discuss challenges and opportunities related to Executive Orders on radiation protection.

Attendance:

Forum 1: Nearly 800 attendees

Forum 2: Nearly 600 attendees

Majority of attendees were HPS members.

Outcome: Information being summarized by University of Alabama - Birmingham professors for scientific publication.

HPS Position on LNT

- Radiation effects below 0.1 Sv above background are not statistically different from zero. (PS010-4)
- Likelihood of radiation-induced disease below 0.1 Sv if any, is so small it is not measurable and can only be estimated hypothetically. (PS014-1)
- LNT oversimplifies the dose-response relationship and cannot reliably project cancer incidence from low-level exposures due to statistical uncertainties. (PS010-4)
- Honest differences in data interpretation and competing theories regarding the dose-response curve at low doses exist in credible scientific studies. (PS008-2)

HPS Position on ALARA

- Radiation exposures of the public from controllable sources should be maintained as low as reasonably achievable. (ALARA) (PS005-3)
- Economic and social factors should be taken into account. (PS005-3)
- No adverse health effects associated with lifetime exposures smaller than ~ 0.1 Sv have been detected. However, inherent limitations cannot exclude small undetected risks at occupational and environmental levels. (PS014-0)

HPS Position on occupational dose limits

- Occupational radiation safety standards and regulations have been adequate over the last 50 years. (PS013-1)

HPS Position on public dose limits

- Public radiation safety standards should be based on specified values of effective dose rather than hypothetical estimates of risk. (PS005-3)
- An effective dose limit of radiation of 1 mSv in any year above the annual natural radiation background results in risks of radiation-induced health effects that are nonexistent or too small to be observed. (PS005-3)
- An effective dose constraint of 0.25 mSv in any year for each controllable source is suitable to ensure that the dose from all sources does not exceed a 1 mSv limit. (PS005-3)
- Regulations should take account of the uncertainties in risk estimates to prevent enormous expenditure of limited resources with no demonstrable public health benefits. (PS008-2)

HPS Position on regulations and standards

- Current radiation protection regulations are not well coordinated among federal agencies and, therefore, create public confusion and concern. (PS008-2)
- A single, independent U.S. federal agency should establish all ionizing radiation safety standards for all controllable sources of occupational and public exposures. (PS004-1)
- Standards should be consistent with the recommendations of the International Commission on Radiological Protection (ICRP), the National Council of Radiation Protection and Measurements (NCRP), and scientific consensus standards. (PS004-1)

References (https://hps.org/hpspublications/positionstatements/)

PS004-1, Compatibility in Radiation Safety Regulations, July 2007

PS005-3, Ionizing Radiation Safety Standards for the General Public, February 2009

PS008-2, Uncertainty in Risk Assessment, February 2013

PS010-4, Radiation Risk in Perspective, February 2019

PS013-1, Occupational Radiation Safety Standards and Regulations Are Sound, July 2010

PS014-0, Compensation for Diseases That Might Be Caused by Radiation Must Consider the Dose, March 2001