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Radiation ↓

other relevant factors.⁷ EPA's air pollution limit has an implied lifetime estimated risk of about 1 in 3,000. These three examples demonstrate the lack of overall interagency consensus on how much radiation risk to the public is acceptable.

Table 1: Differing Federal Limits on Public Radiation Exposure

Standard or guideline/agency	Limit	Estimated lifetime risk of premature cancer death ^a
General public limit/NRC	0.1 rem/yr.	1 in 300
Low-level waste/NRC	0.025 rem/yr.	1 in 1,000
Indoor radon/EPA	4 picocuries per liter concentration limit ^b	1 in 40
Uranium mill tailings/EPA		
Radium	5 picocuries per gram	1 in 50 ^c
Radon	20 picocuries per square meter per second release rate	1 in 14,000 ^d
Uranium fuel cycle/EPA	0.025 rem/yr.	1 in 1,000
Spent fuel, transuranic waste disposal/EPA		
All pathway	0.015 rem/yr.	1 in 2,000
Groundwater	0.004 rem/yr.	1 in 7,000
Containment	1,000 deaths in 10,000 years	1 in 36,000 ^e
Air pollution/EPA	0.01 rem/yr.	1 in 3,000
Drinking water/EPA (proposed)		
Radium	20 picocuries per liter concentration limit	1 in 14,000
Radon	300 picocuries per liter concentration limit	1 in 5,000
Beta/photon ^f	0.004 rem/yr.	1 in 7,000
Superfund cleanup/EPA	Risk range goals of 10 ⁻⁴ to 10 ⁻⁶ g	1 in 15,000 to 1 in 1,500,000

^aFor purposes of comparison, the estimated risks in the table are derived from commonly used assumptions (e.g., a cancer death risk of 5x10⁻⁴ per rem to an individual continuously exposed over a 70-year lifetime). The estimated risks may differ from those derived by agencies, which used various assumptions in setting standards. Some estimated risks are to individuals, and others are to larger defined populations. Risks are rounded.

^bA picocurie is one-trillionth of a curie. A curie is a unit of radioactivity equal to 3.7x10¹⁰ radioactive disintegrations per second.

⁷According to EPA's draft guidance on general public exposure to radiation, limits on single sources of radiation should logically be a fraction of general public protection limits.