New EPA Radiation Exposure Guidance Comparisons			
	2007 PAG Guidance Document	**2017 PAG Guidance Document**	**SDWA Maximum Contaminant Level Goals**
How Much Radiation Exposure is "Safe"?	0 millirem[1]	10,000 mrem[2]	0 millirem[3]
Chest X-Ray Equivalent[4]	0	5,000-10,000	0 millirem
Increased Instances of Cancer[5]	0	every 86th person would get a cancer from that radiation exposure	0

Comparison to Longstanding EPA Radiation Protection Limits

2017 PAG Guidance Document	EPA Longstanding Safe Drinking Water Act Regulatory Limit	EPA Longstanding Hazardous Air Regulatory Limit
10,000 millirem	4 millirem	10 millirem

Comparison to EPA's Longstanding Acceptable Cancer Risk Range

2017 PAG Guidance Document	Longstanding Acceptable Risk Range	How Far Outside the Acceptable Risk Range is the New Radiation Level
$>10^{-2}$ Risk	10^{-4} to 10^{-6}	100 to 10,000 times

[1] U.S. Envtl. Prot. Agency, *Communicating Radiation Risk*, 16 (Sept. 2007) ("There is no known safe amount of radiation…the current body of scientific knowledge tells us this.") *available at* https://www.epa.gov/radiation/pag-public-communication-resources.

[2] U.S. Envtl. Prot. Agency, *Questions & Answers for Radiological and Nuclear Emergencies*, 19 (Sept. 2017)("How much radiation is safe? How much is considered low risk: According to radiation safety experts, radiation exposures of 5–10 rem (5,000–10,000 mrem or 50–100 mSv) usually result in no harmful health effects") *available at* https://www.epa.gov/radiation/pag-public-communication-resources. -

[3] The regulations under the SDWA set the Maximum contaminant level goals (MCLG) for radionuclides at zero MCLGs "set at the level at which no known or anticipated adverse effects on the health of persons occur and which allows an adequate margin of safety." 42 U.S.C. § 300g-1(b)(4); 40 C.F.R. 141.55; 65 Fed. Reg. 76708, 76710 (Dec. 7, 2000) ("All MCLGs for radionuclides were proposed as zero pCi/L, based on a linear no-threshold cancer risk model for ionizing radiation.")

[4] A posterior-anterior (PA) chest Xray produces 0.02 mSv (2 millirem) dose, and a lateral chest Xray twice that. See, e.g., "Doses from Medical X-ray Procedures," Health Physics Society, at https://hps.org/physicians/documents/Doses_from_Medical_X-Ray_Procedures.pdf

[5] This figure is based on EPA's official 2011 radiation risk estimate of 1.16×10^{-3} cancers per rem, which in turn is based on the National Research Council's almost identical BEIR VII risk estimate. In their last update of radiations relation to cancer, the EPA states that they use the BEIR VII approach. To estimate the rates of cancer related to radiation exposure. U.S. Envtl. Prot. Agency, *EPA Radiogenic Cancer Risk Models and Projections for the U.S. Population*, 16 (April 2011) *available at,* https://www.epa.gov/sites/production/files/2015-05/documents/bbfinalversion.pdf. National Research Council, *BEIR VII: Health Risks from Exposure to Low Levels of Ionizing Radiation: Report in Brief*, 3 *available at* http://www.psr.org/nuclear-bailout/resources/beir-vii-health-risks-from-exposure.pdf.