Are Federal Permissible Standards for TRITIUM Too Permissive?

Tritium (radioactive hydrogen) occurs naturally in rivers and oceans at average concentrations of from **3 to 24** picocuries per liter**.** [1, 2]

> A **picocurie**, or one trillionth of a curie, emits 2.22 radiation particles and/or rays per minute**.** A single particle or ray has a chance of injuring or mutating a cell in a way that can cause harmful health consequences.

The U.S. Environmental Protection Agency's current regulations allow our drinking water to contain **20,000** picocuries per liter --- that is, many times more than the amount found in nature.

Tritium is also created in every nuclear power plant in great quantities. Since no economically feasible technology exists to filter out tritium from the plant's releases of waste liquids and gases, the federal government does not require that it be filtered. Monitoring equipment also does not exist that can accurately determine the amounts of tritium released to the environment.

Any exposure to natural or manmade radiation increases a person's risk of genetic mutations, cancer and other lifeshortening diseases. The federal government has established legally permissible standards for radiation, but **permissible does not mean safe**.

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[1] Excerpt from Behaviour of Tritium in the Environment -- Proceedings of a Symposium, San Francisco, 16-20 October 1978, Published by the **International Atomic Energy Agency.** Vienna, 1979. page 536**:**

> **"2. Natural and Anthropogenic [manmade] Sources of Tritium:**
> The present biospheric inventory of tritium results primarily from natural atmospheric sources, nuclear explosions and the nuclear industry.
>
> **"2.1 Natural sources.**
> Nuclear reactions induced by cosmogenic radiation in the atmosphere are the main source of natural tritium generation. Calculated production rates are still rather uncertain but indicate a global inventory of about 20 - 40 megacuries. The average concentrations of tritium of natural origin are about **3 picocuries per liter** in ocean surface waters, 4 pCi/liter in precipitation, and **6 - 24 pCi/liter** in continental waters." (emphases added)

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2 Excerpt from Tritium in the Environment. Published by the **National Council on Radiation Protection and Measurements**, Washington DC. March 1979 – NCRP Report No. 62, page 78**:**

> **"8.3 Doses from Tritium in the Environment:**
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> **"8.3.1 Natural.**
> The average concentration of tritium in **environmental waters** due to natural tritium production in the atmosphere by cosmic rays is **3.2 to 16 picocuries per liter**. The production rate is estimated to be 4 to 5.5 megacuries per year. The larger estimate, with the seven compartment model (release to world atmosphere) gives an equilibrium tritium concentration of 16.6 pCi per liter in air, **10.4 pCi/liter in streams**, 1.6 pCi/liter in surface ocean, and 12.3 pCi/liter in man." (emphases added) # #

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