

NRCREP - Re foolmaking, er, rulemaking, on : "low level" radwaste policy

From: wells edelmann <whatthewells@yahoo.com>
To: <NRCREP@nrc.gov>
Date: 09/05/2006 12:42 PM
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The NRC never really gets it as a body. Some people inside the NRC are fine honest public servants. Others serve the nuclear industry as if they were its slaves.

IT's very simple. Radioactivity causes damage to living cells, including the DNA and other parts of cells necessary for life. If you have low level exposure, the likelihood is that the cell survives but with DNA (genetic) damage, mutations (which can lead to cancers, etc) or perhaps even both. Dr. John Gofman showed in detail how the lowest measurable dose of radiation increases cancer risk and damages DNA.

I can recall Dr. Karl Z Morgan, the first time I spoke with him, keying in first on the dangers of tritium from PWR nuclear power plants. (see attachment at end of these comments)

Now comes The NRC (Nuclear Radiation Corporation) with more ill reasoned, perhaps dishonest as you were about the uptake values identified as fraudulent science by EFEU of Heidelberg in the 1970s, see Wash Post 11/79.

NC Citizens Research Group has signed on to the comments by NIRS.

Please consider these comments too. We citizens are the owners of the government, not guinea pigs to be experimented upon by corporations who in general care less about human life, health and genetic integrity than they do about their almighty dollar.

Thanks

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TRITIUM from Nuclear Power Plants: Its Biological Hazards

Tritium is radioactive hydrogen. It is generated in nature by the interaction between

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cosmic rays and the atmosphere. The average natural concentration of tritium in environmental waters has been estimated to range from 3.2 to 24 picocuries per liter of water. Although naturally occurring on Earth, significant amounts of tritium are also generated by human activity, including the operation of nuclear power plants, the manufacture of nuclear weapons, and atomic bomb testing. In fact, releases of tritium from nuclear power plants to the atmosphere have reached as high as tens of thousands of curies in one year, and releases to bodies of water have measured as high as tens of millions of picocuries per liter.

The current U.S. Environmental Protection Agency standard for permissible levels of tritium in drinking water is 20,000 picocuries per liter. Please note: permissible does not mean safe.

Nuclear power plants routinely and accidentally release tritium into the air and water as a gas (HT) or as water (HTO or 3HOH). No economically feasible technology exists to filter tritium from a nuclear power plant's gaseous and liquid emissions to the environment. Therefore, the U.S. Nuclear Regulatory Commission does not require that it be filtered.

The NRC allows a licensee to release an amount of tritium that could result in a radiation dose to a member of the public of up to 100 millirem (one millisievert) per year --- in planned air and water effluents (Title 10, Code of Fedl. Regs., Part20.1301). The NRC translates one million picocuries of tritium per liter as the equivalent of 50 millirem/year (10 CFR Part 20, Introductory Notes to Appendix B, Table 2, Column 2). Please note: Table 2 lists concentrations in "microcuries per millileter." For example, 1E-3 μ Ci/ml equals one million picocuries per liter.

Tritium has a half-life of 12.3 years. A radioactive material gives off hazardous radiation for at least ten half-lives.

Tritium emits radioactive beta particles. Once tritium is inhaled or swallowed, its beta particles can bombard cells. If a particle zaps a DNA molecule in a cell, it can cause a mutation. If it mutates a gene important to cell function, a serious disease may result. Just as water containing ordinary hydrogen and oxygen is a component of all living cells, tritiated water can also be incorporated into the cells of the body. Tritium incorporated into the DNA of plants and animals is referred to as organically bound tritium (OBT). Organically bound tritium can deliver damaging radiation doses for a much longer time than ingested tritiated water or inhaled tritiated water vapor. Research indicates that tritium can remain in the human body for more than ten years.

Routine releases and accidental spills of tritium from nuclear power plants pose a growing health and safety concern. Exposure to tritium has been clinically proven to cause cancer, genetic mutations and birth defects in laboratory animals. In studies conducted by Lawrence Livermore Laboratory in 1991, a comprehensive review of the carcinogenic, mutagenic and teratogenic effects of tritium exposure revealed that tritium packs 1.5 to 5 times more relative biological effectiveness (RBE), or biological change per unit of radiation (one rad or 0.01 gray), than gamma radiation or X-rays.

[Tritium: Health Consequences](#)  NIRS fact sheet. July 2006

For examples of the growing body of evidence about tritium's toxicity and for

information about accidents involving tritium contamination, see the documents and links below:

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