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Reactor Effluents

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General Comment

Nuclear reactors routinely emit tritium into the environment. Tritium is contaminating drinking water and precipitation. Tritium bioaccumulates because it binds with oxygen and is incorporated into cells. Tritium decays beta particles that can cause damage to cells and may be responsible for increased rates of downs syndrome in children living in close proximity to nuclear power plants.

Nuclear reactors also produce vast emissions when fuel is changed out every year. Work by Ian Fairlie has documented that emission events from fuel changes are substantial. The nuclear industry inappropriately averages that high dose across a full year of exposure, diluting effects on paper representations of risk but not diluting risks in the real world where a high radiation dose during fuel changes could cause problems for our most vulnerable citizens, infants and children (see <http://www.ianfairlie.org/uncategorized/radioactive-spikes-at-nuclear-power-stations/>)

Nuclear processing of fuel routinely produces Krypton-85, which is a GREEN HOUSE gas that also happens to increase atmospheric electricity. I have not seen models of effects but there is no doubt at all that atmospheric levels of krypton85 have increased substantially.

A 1997 study found significant increases in Krypton-85 in the atmosphere from nuclear explosions and reprocessing, noting that in the mid-1940s there existed less than 5 disintegrations per minute (dpm) per liter of krypton, but by the end of that decade levels had risen to 100 dpm per liter. Samples from the 1990s measured "tens of thousands" of disintegrations per minute per liter. Krypton-85 increases air ionization and electrical conductivity. A study on Krypton-85 published by the IAEA notes: "There are unforeseeable effects for weather and climate if the krypton-85 content of the earth atmosphere continues to rise. There may be a krypton-specific greenhouse effect and a collapse of the natural atmospheric-electrical field." Concerns about

Krypton-85 levels caused the EPA to announce new regulatory efforts in 2014.

Nuclear externalizes its risk. Nuclear is not good for the environment but rather poisons humans and ecosystems with its ongoing effluents.