OPINION | COMMENTARY

How Much Radiation Is Too Much?

Regulators have set exposure limits far too low, inspiring irrational fear of a cheap, clean energy source.

By Robert Hargraves
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A nuclear test detonation in Yucca Flat, Nev., April. 22, 1952.
PHOTO: ANONYMOUS/ASSOCIATED PRESS

New nuclear power is cleaner and can be even cheaper than electricity generated by burning coal, but in August the U.S. Nuclear Regulatory Commission denied a petition aimed at reducing the cost of nuclear power and the public's fear of radiation. The petition asked the NRC to move away from its "linear no threshold" hypothesis, which has long served as the basis for its highly restrictive radiation-exposure regulations.

I signed the petition in 2015 along with many eminent radiation oncologists, health physicists and scientists who are concerned that radiation limits set in the name of safety were orders of magnitude too low. These limits create unwarranted fears among average citizens ranging from whether they should get a CT scan of their midsection to whether nuclear power plants should be allowed to exist at all, anywhere.

In 1957 the internationally recommended limit for radiation exposure was about 15 times the natural background radiation that people absorb from rocks and cosmic rays. Without evidence of harm from exposures within the 1957 limits, the U.S. had by 1991 ratcheted its public limits down to less than a third of natural background radiation.

In its petition denial, the NRC wrote that "ionizing radiation is always considered harmful

and . . . there is no threshold below which an amount of radiation exposure to the human body is not harmful." The NRC also requires that any radiation exposures must be "as low as reasonably achievable."

No wonder some people fear nuclear power. No wonder costs are high. No wonder no new nuclear power plant has been designed, built and run in the U.S. since the NRC was established in 1975.

The NRC exhibits the safetyism of many advisory bodies, such as the International Commission on Radiological Protection, which are relentlessly dedicated to reducing radiation exposures—regardless of other costs.

When an earthquake and tsunami struck the Fukushima Daiichi plant in Japan in 2011, no one was harmed by radiation, but more than 2,000 people died from the stress and danger of the evacuations. The Dirty Harry atomic bomb test in 1953 dropped two to three times as much radioactive fallout on the residents of St. George, Utah, than people near Fukushima were exposed to. There was no evacuation in Utah. People were asked to stay indoors that day; there was no increase in cancer rates.

The NRC absolves itself in advance, writing that its safety principles "do not lead directly to an unjustified fear of radiation, and thereby do not directly contribute to evacuation casualties and socioeconomic costs after a nuclear incident."

What's the cost of nuclear safetyism? With rational, efficient regulation new nuclear power could compete on price with natural gas, now the predominant source of electricity in America. The death rate per unit of electricity from natural-gas accidents has been 40 times the death rate from nuclear accidents. Particulate emissions from the world's growing number of coal-fired power plants kill more than 200,000 people a year.

The NRC ignored the petition's claim that nuclear power generation would reduce the cost of electricity. It also ignored the climate benefits of nuclear power generation, which doesn't emit CO2 the way coal and natural gas power plants do.

U.S. government agencies and the bureaucrats who staff them often seem unable to weigh massive benefits against hypothetical risks. They fear blame for postulated, unobserved harms that might be attributed to their actions. Instead they endorse safetyism so they can remain personally blameless for continuing harms to the economy and the climate enabled by their inaction.

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