

On Nuclear Energy – The Safest, Cleanest, And Likely Cheapest Energy.

Fear, and remember fear blinds logic, is likely your first response to reading the phrase nuclear energy. For many of us, the word nuclear immediately conjures images of nuclear weapons (Hiroshima, Nagasaki, and The Cold War), or of Chernobyl, Three Mile Island, and Fukushima. All terrifying – by Neocon design.

Prepare to not be afraid of nuclear *energy*.

First, consider how safe we have already made nuclear *energy*. Nuclear submarines are not just nuclear because they carry nuclear missiles; many submarines are powered by nuclear energy. According to Anthony Jared¹, a 30-year veteran of the Navy monitoring submarines powered by nuclear energy who has reason to know, they are incredibly *safe*. Since the launch of the first nuclear powered submarine (the USS Nautilus) in 1955, the number of hours nuclear powered submarines have been operating totals 5,700 years (the World Nuclear Energy Association puts this number at 6,300 years²), traveling 134 million miles around the world. Across all that time and space, not a single crew member of *any* submarine powered by nuclear energy – whether Russian, American, or Chinese – has *ever* been harmed by radiation. How can that be? What about Fukushima, Three Mile Island, and Chernobyl, weren't those mass radiation casualty events? In short, *no*. There were no radiation deaths at Fukushima.³ It appears there were *none* after Three Mile Island either.⁴ Chernobyl – which is widely considered to be the worst nuclear power disaster in history and a freak accident because whoever was in charge all but “threw out the operational handbook” –

¹ <https://www.audible.com/pd/The-Truth-About-Nuclear-Energy-with-Anthony-Jared-WBD614-Podcast/B0BTTS27KS>.

² <https://www.world-nuclear.org/information-library/non-power-nuclear-applications/transport/nuclear-powered-ships.aspx>.

³ https://en.wikipedia.org/wiki/Fukushima_Daiichi_nuclear_disaster_casualties.

⁴ https://en.wikipedia.org/wiki/Three_Mile_Island_accident_health_effects.

resulted in, maybe, 90 deaths.⁵ A related fact is that France has, for years, generated 65-85% (depending on which source you read) of its electricity from nuclear energy, and you've never heard of a French nuclear disaster. This followed the 1973 oil crisis, in response to which Pierre Messmer, France's then Prime Minister, instituted a nationwide plan to generate all of France's electricity needs from nuclear energy.⁶ That was a purely political choice, and every state in America can make the same choice, particularly given that we're facing a possible climate crisis now, and even if we are not, why wouldn't we switch to a cleaner, more reliable, safer, and cheaper form of electricity generation if it makes sense to do so?

Now let's consider the historical danger to human beings of nuclear energy compared to all other currently known and used forms of energy generation. In terms of death rates per unit of electricity production, accounting for accidents and conservative pollution assessments, nuclear energy is the second safest source of energy: solar has 0.02 deaths per Terawatt Hour ("TWh"; a standard electricity generation measurement), nuclear has 0.03, wind has 0.04, hydropower has 1.3, oil has 18.43, coal has 24.62, and brown coal has 32.72.⁷

Nuclear energy, because it's so dense, is easily the most abundant and climate friendly energy source. The average human life will consume about 1.1kg of uranium contributing 0-3064kg of CO₂ to the atmosphere, while oil, the next most dense energy source, requires 65,664kg to sustain an average human life, contributing 209,678kg of CO₂ to the atmosphere.⁸ There are sufficient known uranium deposits to provide the world's electricity needs through 2040, and beyond.⁹ This

⁵ https://en.wikipedia.org/wiki/Deaths_due_to_the_Chernobyl_disaster.

⁶ https://en.wikipedia.org/wiki/Nuclear_power_in_France.

⁷ <https://ourworldindata.org/grapher/death-rates-from-energy-production-per-twh>.

⁸ <https://www.iaea.org/newscenter/news/infographics-nuclear-energy-compared>.

⁹ https://www.oecd-nea.org/jcms/pl_52716/world-s-uranium-resources-enough-for-the-foreseeable-future-say-nea-and-iaea-in-new-report.

raises the question of where we Decent Americans will get the uranium from; at the moment the United States does not have significant known uranium deposits. 2 close American allies, Canada and Australia, have among the largest reserves in the world.¹⁰

If upon understanding the factual accuracy of all of the above you're still terrified by radiation, understand that you might be suffering from radiophobia.¹¹ This is not because you're stupid; it's just natural to you. As with the vast majority of our fears as Decent Americans today, it is because the subject of radiation is not well understood, and the Neocons wants to keep it that way. We are all irradiated *every day* by the sun and the earth.¹² As with many of the Neocon lies told to us, they play with numbers, often scaring us with percentages or comparisons, rather than using raw numbers and perspective (in other contexts, perspective might be context or historical context). This is how and why source materials are usually not provided to us, and instead interpreted for us by a very small number of people.

Radiation dose is measured in millirems.

Mr. Jared, in 30 years of operating nuclear reactors, 11 of which he was underwater, 8 of those years he was sleeping within 60ft of the reactor, he received less radiation dose than he would receive if he'd done 1 whole body CT scan (about 1,000 millirem). A dental x-ray gives a radiation dose of 3-5 millirem; about the same as you'd receive on a cross-country flight (because you're closer to the sun). An abdominal x-ray gives a dose of about 70 millirem. Federal limit for a nuclear energy employee is 5,000 millirem, while non-nuclear workers are recommended 100 millirem. Natural background radiation is 300-320 millirem per year (for all of us) and an additional 300 millirem per year from medical sources (the x-rays and CT scans). Most natural radiation you get dosed with comes from the terrifying bananas, spinach, ocean fish, and brazil nuts etc. that you eat. Even clean water has radiation in

¹⁰ https://en.wikipedia.org/wiki/List_of_countries_by_uranium_reserves.

¹¹ <https://en.wikipedia.org/wiki/Radiophobia>.

¹² <https://youtu.be/MpzaJwfwB9Q>.

it.¹³ If you lived in Finland, 50,000 millirem per year. If you live in Denver, you get a higher dose of millirem every day than if you live in Chattanooga.

So what's all the worry about? Short large doses of millirem will cause harm to your body. 100,000 millirem will cause radiation sickness. 500,000 millirem will cause death. Radiation therapy, often used to treat cancer, "a hyperthyroid problem such as that experienced by former President George Bush is typically treated with a radioactive iodine drink designed to deliver about 10,000,000 millirems of radioactive iodine to the thyroid. It would coincidentally [sic] deliver a dose to the rest of the body of about 20,000 millirems. A slightly lower dose of radioactivity is used for cancerous tumors. Radiation to kill a cancerous tumor often involves a beam delivering 6,000,000 millirems to the cancerous tissue, but the whole-body equivalent dose is much less, as it was in the thyroid example cited above."¹⁴ Our *own bodies* generate about 40 millirems a year¹⁵ "from the decay of isotopes incorporated into the molecules of our being".

If you remain skeptical of nuclear energy, the United States Office of Nuclear Energy ("USONE") in the United States Department of Energy advises that nuclear energy currently powers 70 million homes in America from 92 nuclear reactors in 28 States (and Illinois, South Carolina, and New Hampshire get more than 50% of their energy from nuclear energy), and is "the most reliable" energy source in America.

USONE further advises that the total nuclear waste generated in the last 60 years would fit in 1 football field less than 10 yards deep.¹⁶

¹³ <https://www.thoughtco.com/common-naturally-radioactive-foods-607456>.

¹⁴ <https://news.mit.edu/1994/safe-0105>.

¹⁵ <https://www.discovermagazine.com/health/everything-emits-radiation-even-you>.

¹⁶ <https://www.energy.gov/ne/articles/5-fast-facts-about-nuclear-energy>.

Finland has some innovative solutions to nuclear waste¹⁷, and there are many others across the planet, including of course, France.¹⁸

Given that all of the foregoing is fact, you might wonder why America hasn't done this yet. The answer, it appears to us is simple: nuclear energy is one potent lever with which to disband the Neocons. With abundant energy, the argument for war disappears, and they will no longer be able to continue to fleece Decent Americans with fluctuating fossil fuel prices.

To the extent any fear remains (particularly of nuclear waste storage), and there isn't enough information already out there, let's spend \$1 billion of the \$47 trillion we're going to get back, do the research publicly, and educate ourselves.

Finally, you will also have to be sure that we're not being paid to lie by the nuclear industry. You can take our word for it, we're not – and no credible evidence will ever disprove that.

If some of the websites have been changed (so as they don't say what I say they say) since I wrote this, we'll have to understand why.

¹⁷ <https://www.forbes.com/sites/jamesconca/2021/05/31/finland-breaks-ground-on-its-deep-geologic-nuclear-waste-repository/?sh=4d40329a6103>.

¹⁸ <https://www.power-technology.com/features/managing-nuclear-waste-france-long-short-game/>.