

"Nuclear Power is Extremely Safe"

In the midst of a still struggling and fragile global economy, Germany has announced that it will shut down seven nuclear plants by the end of the year-- which means that Germans will be left to run their factories, heat their homes, and power their economy with 10% less electrical generating capacity. Nine more plants will be shut down over the next decade and tens of billions of dollars in investment will be lost.

The grounds for this move, and similar proposals in Switzerland, Italy, and other countries, is safety. As the Swiss energy minister put it, "Fukushima showed that the risk of nuclear power is too high."

In fact, Fukushima showed just the opposite. How's that? Well for starters, ask yourself what the death toll was at Fukushima. 100? 200? 10? Not true. Try zero.

To think rationally about nuclear safety, you must identify the whole context. As the late, great energy thinker Petr Beckmann argued three decades ago in his contrarian classic "The Health Hazards of NOT Going Nuclear," every means of generating power has dangers and risks, but nuclear power "is far safer than any other form of large-scale energy conversion yet invented."

To date, there have been devised only five practical means of producing large-scale, affordable, reliable energy: coal, natural gas, oil, hydroelectric, and nuclear. (Although widely-hyped and frequently subsidized, solar and wind power -- which generate energy from highly diffuse and intermittent sources -- have failed for forty years to deliver.) Whether you're concerned about a dangerous accident or harmful emissions, a nuclear power plant is the safest way to generate power.

The key to nuclear power's safety, Beckmann explains, is that it uses a radioactive energy source--such as uranium. In addition to having the advantage of storing millions of times more energy per unit of volume than coal, gas, or water, the radioactive material used in power plants literally cannot explode. Ridiculing the scare tactics that a nuclear power plant poses the same dangers as a nuclear bomb, Beckmann observes: "An explosive nuclear chain reaction is no more feasible in the type of uranium used as power plant fuel than it is in chewing gum or pickled cucumbers."

The one danger of running a nuclear plant is a large release of radiation. This is extremely unlikely, because nuclear plants contain numerous shielding and containment mechanisms (universal in the civilized world but callously foregone by the Soviets in their Chernobyl plant).

But in the most adverse circumstances, as Fukushima illustrated, the cooling system designed to moderate the uranium's heat can fail, the backups can fail, the radioactive material can overheat to the point that the plant cannot handle the pressure, and a radiation release is necessary.

Yet, even then, it is extremely unlikely that the radiation levels will be high enough to cause radiation sickness or cancer--and radiation in modest quantities is a normal, perfectly healthy feature of life (your blood is radioactive, as is the sun). And even the worst nuclear accident gives neighbors a luxury that broken dams and exploding refineries do not: time.

While many, many things went wrong at Fukushima, as might be expected in an unprecedented natural disaster, what is more remarkable is that thanks to the fundamental integrity of the nuclear vessel and the containment building, none of the power plant's neighbors have died, nor have any apparently been exposed to harmful levels of radiation. (The Japanese government has announced that eight of 2,400 workers have been exposed to higher-than-allowed amounts of radiation, but these amounts are often hundreds of times less than is necessary to do actual damage.)

Now imagine if a 9.0 earthquake and 40 foot tsunami had hit a hydroelectric dam; thousands of people could have died in the ensuing flood.

Or what if they had hit a natural gas plant or oil refinery or coal plant? These structures could have suffered explosions, such as the type we saw on BP's Deepwater Horizon platform in the Gulf of Mexico, or just collapsed and spewed debris and pollution throughout the area.

The Fukushima nuclear plants, with their incredible resilience, almost certainly saved many, many lives.

Nuclear power also saves lives that would otherwise be lost to pollution. A nuclear power plant has effectively zero harmful emissions. (It generates a small amount of waste, which France, among other countries, has demonstrated can be both re-used economically and stored safely.) By contrast, fossil fuel plants generate various forms of particulate matter that strongly correlate with higher cancer rates. We should not "knock coal," Beckmann stressed, as fossil fuel plants are vital for human survival for decades to come,

but we should recognize that new nuclear power plants are far safer than the status quo.

The perversity of using nuclear power's demonstrated safety as a black mark against it is not new. Beckmann's book came out in 1976--three years before the Three Mile Island "disaster," which nuclear critics capitalized on, even though it was, as Beckmann later wrote, "history's only major disaster with a toll of zero dead, zero injured, and zero diseased."

Still, environmentalists shut down nuclear plants, oblivious to the accidents they could have prevented.

In just the three years leading up to Three Mile Island, Beckmann observed, "dam disasters have killed thousands of people (at least 2,000 in India in August 1979); many hundreds have died in explosions and fires of gas, oil, butane, gasoline, and other fuels . . ."

As a consequence of the anti-nuclear hysteria in Beckmann's time, the U.S. government made it either impossible or economically prohibitive to build new plants, in the name of "safety." Fukushima has affirmed that nuclear is the safest form of power in existence. Any government that fails to recognize this is endangering its citizens' health.

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