

Nuclear Power Fails as Big Business & Worsens Climate Chaos

By Tim Judson and Linda Pentz Gunter

The climate crisis is upon us, and we have no time to lose. We cannot afford a single false step. Even as the UN COP26 climate conference failed to put us on the necessary path to keep the world within 1.5 degrees Celsius of increased warming, there are still important choices to be made as countries roll out their latest climate plans.

That is why the United States, in its pursuit of carbon reductions, must not allow itself to be misled by the false promises of nuclear power, both its continued use and illusory new programs. Either would be a mistake.

The push to develop new nuclear is focused on so-called advanced reactors and Small Modular Reactors (SMRs), but the cost and safety uncertainties of these designs have not been satisfactorily addressed.

Yet Congress is already looking to award two “advanced” fast reactor designs — the Terrapower Sodium reactor, and X-energy Xe-100 reactor — and an extravagant \$3.2 billion in subsidies, even though the former is a project of billionaires Bill Gates and Warren Buffett.

SMRs, typically less than one-third the size of a traditional nuclear power reactor, would need to be brought on by the hundreds if not thousands to achieve the advertised cost savings, a factor that has left designs on the drawing board for decades and has not attracted buyers. Even if these unproven designs work, such a program could never be achieved at a scale or in time to make a dent in carbon emissions.

The likelihood of failure is increased by the recent experience of building new, traditional reactors. They consistently suffer lengthy delays and massive cost increases, which suggests that commercializing new, untested reactor designs will not go faster or be cheaper.

For example, another \$1 billion was just added to the ever-escalating tab for two Westinghouse reactors at Plant Vogtle in Georgia — underway since 2013, yet still unfinished — with costs ballooning to over \$33 billion and further delays likely pushing final completion into 2024.

The French-designed Evolutionary Power Reactor (EPR) is arguably a spectacular failure with massive cost-overruns, long delays, and endless technical flaws. Most recently, at the now-operating Taishan 1 EPR in China, vibrations damaged fuel rods, forcing its shutdown. The problem could be linked to a design flaw also found in the four still unfinished EPRs in Europe, causing a French nuclear lab to raise doubts about their safety.

False choice: climate chaos or cancer-causing pollution

Recognizing these challenges, the U.S. nuclear industry is focusing most of its energy on keeping its current fleet of 93 reactors running, arguing that they are carbon-free. This is patently false — and not true of any human-made energy source, including renewables, as long as mining, transportation, and manufacturing of these technologies are so reliant on fossil fuels.

However, the “zero-emission” mantra has been used to justify the inclusion of nuclear power in state and federal subsidies. If it had survived the machinations of Sen. Joe Manchin, D-W.Va., the promising Build Back Better Act may have still shot itself in the foot by including a massive \$35 billion subsidy for already-operating nuclear reactors in its “Zero-Emissions Nuclear Energy Production Credit.” This subsidy would have funneled billions of dollars to corporations that own nuclear reactors, nearly all of which will continue operating with or without such support.

Subsidizing nuclear power siphons funds from real solutions, like renewables, just when these are needed most urgently, thereby making climate change worse.

Redirecting funds to old reactors further misses the point: even if reactors were carbon-free, nuclear power is not a good way to address the climate crisis, because it ignores the two biggest climate drawbacks — time and cost.

As Stanford physicist Amory Lovins has pointed out, to address the climate crisis expeditiously and effectively, we must choose energy sources that can reduce the greatest amount of carbon emissions most quickly and at the least cost. This is where renewable energy, energy efficiency, and conservation beat nuclear power — and new gas and coal as well.

A recent Sussex University study showed that countries that have focused on nuclear power have not significantly reduced carbon emissions, while countries with strong renewable energy programs have.

Nuclear power has no business case and takes too long. That alone should rule it out as useful to climate protection, even before we look at other disqualifying factors such as the environmental justice and health impacts of long-lived lethal radioactive waste and potential meltdowns. Our future should not hinge on the nuclear industry’s false choice between climate chaos and cancer-causing pollution. We can and must do better.

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U.S. Quietly Discloses Plans for Mass, Cross-Country Shipments of High-Level Radioactive Waste

How far is your house or apartment from a major highway or railroad line? Do you want to play Russian Roulette with radioactive waste in transit for 40 to 60 years?

In December the U.S. Nuclear Regulatory Commission (NRC) staff quietly reported preparing for tens of thousands of cross-country shipments of high-level radioactive waste from nuclear reactors to the desert Southwest. The oft-disparaged U.S. infrastructure of decrepit roads, faulty bridges, rickety rails, and rusty barges may not be ready for such an onrush of immensely heavy radioactive waste casks.

Diane D’Arrigo, of Nuclear Information and Resource Service (NIRS) in Maryland, and Leona Morgan, with the Nuclear Issues Study Group in New Mexico, report that the transports would carry “the hottest, most concentrated atomic waste from the nuclear fuel chain, misleadingly dubbed ‘spent nuclear fuel.’ This radioactive waste can cause death in minutes if unshielded, and remains radioactive for literally millions of years; it is one of the most deadly materials on Earth.”

In his Dec. 2, 2021, letter to NRC commissioners, Daniel Dorman, NRC’s executive director for operations, wrote that: “To prepare for a potential large-scale commercial transportation campaign, staff ... assessed the NRC’s readiness for oversight of a large-scale, multi-mode, multi-package, extended-duration campaign” of heavy radioactive waste shipments by trains, trucks, and barges. The NRC’s “assessment” was published Dec. 17, 2021 with Dorman’s letter, which noted that waste is now stored in cooling pools and/or heavy outdoor casks near the reactors that produce it — at 75 sites across the country.

Dorman’s letter — unearthed Jan. 4, 2022 by Michael Keegan of the Coalition for a Nuclear-Free Great Lakes — reports, “The NRC received two applications to construct and operate consolidated interim storage facilities for [high-level waste],

using dry storage systems, at sites in Texas and New Mexico.” In September 2021, the NRC issued a license to Interim Storage Partners Inc. for the Texas site, and a license decision is pending on a Holtec Corp. proposal for New Mexico. Both projects are the subject of lawsuits that will slow the industry’s and government’s rush to establish a dumpsite.



One U.S. Department of Energy proposal is to ship highly radioactive waste fuel on barges across parts of Lake Michigan.

Consolidated waste storage

Critics of the licensing process are demanding that the Atomic Safety and Licensing Board halt the Holtec procedure because it is illegal. The Nuclear Waste Policy Act “only allows the U.S. Department of Energy (DOE) to take ownership of irradiated nuclear fuel at an operating permanent geologic repository,” NIRS notes. “Such a title- and liability-transfer to DOE at the ‘interim’ site proposed by Holtec is not allowed.”

NIRS reports that “The Holtec [company’s] license application says the lethal waste at the site would be owned by either the DOE or the nuclear utility companies that made it.” Yet at one licensing hearing, Holtec’s lawyer, Jay Silberg, admitted that under

current law, DOE cannot take title and ownership of the waste at an “interim” centralized storage site.

Presently, “dry casks” that hold the waste onsite near reactors are not the same canisters required for long-haul transport. Dangerous repackaging and testing will be required. Government environmental impact statements, regarding thousands of these shipments over a decades-long timeline, have officially predicted an alarming number of accidents, crashes, and potential disasters.

Maps of likely transport routes produced by the Nevada Agency for Nuclear Projects are available at BeyondNuclear.org. The maps show cities, states, and congressional districts “potentially affected by shipments” and are based on DOE plans from 2008 for the discredited Yucca Mountain dump site near Las Vegas. Yucca Mountain was scientifically disqualified and cancelled during the Obama Administration, but Nevada’s maps shed light on routes to the New Mexico and Texas sites, because the further away from the Southwest such waste shipments originate, the more similar-to-identical the transport routes would be.

The Texas and New Mexico dump site owners (Interim Storage Partners and Holtec) in league with the NRC, have kept their shipment plans obscure and secretive. The waste’s producers and managers don’t want the public to know if or when “Mobile Chernobyls” could start passing through towns and cities, or to start organizing to stop them. They know there are reasons to protest: the government has even proposed Great Lakes water routes that would see heavy, high-level waste casks on barges — a scheme critics have called “the Edmund Fitzgerald Plan” — and the gales of November be damned. — **JL**