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The Double-Threat: New Nuclear Power and the Data Center Boom

By Lindsay Potter

Small modular and so-called “advanced” nuclear technology is riding the coat tails of yet another capitulation to the seemingly unstoppable march of “progress.” Progress not in feeding or housing families, lighting or heating homes, or providing jobs and education, but in the unchecked development of computer technology and artificial intelligence.

In the face of soaring cancer rates over the last five decades, despite consistent proof of the connection between nuclear power and nuclear weapons proliferation, despite the generations-long objections of indigenous communities bearing the burden of uranium mining, and the more than seventy years of reactor operations without a true high-level radioactive waste storage solution — tech billionaires are personally financing the next wave of nuclear energy infrastructure.

But why? Renewable energy sources are growing at a remarkable rate. Scientists and researchers have shown that current and projected grid loads through 2030 and 2050 can be met using renewable sources without nuclear. Renewable energy costs less. According to *Forbes*, nuclear is the most expensive way to generate electricity. Renewable sources can be built in a fraction of the time it takes to construct new nuclear. However, the goliaths of computer and technology innovation insist small modular nuclear reactors (SMNRs) are the only way to generate enough power for their coming wave of new data centers.

What are SMNRs?

There are many different reactor designs out there, with different fuel sources and parent companies, but a small modular nuclear reactor is typically any reactor producing between 20-300 megawatts of electricity. There are no commercially operational SMNRs in the United States. Many SMNR designs require fuel different from conventional reactors and those experimental fuel sources are still under development and not scaled commercially. Companies such as Oklo, already permitted to proceed with a SMNR design at the Idaho National Lab site, would be unable to produce fuel until at least 2030. According to Reuters, the U.S. Department of Energy estimates the domestic demand for certain new types of SMNR fuel could reach 50 metric tons per year by 2035. However, the only U.S. maker of the fuel produced 900 kilograms in 2024. All of this takes enormous amounts of funding to develop and test. This fuel processing infrastructure still requires mining of new uranium and leaves additional radioactive waste — from the reprocessing of waste fuel into new fuel.

The first SMNR project approved in the U.S. was cancelled when the cost per megawatt hour ballooned 53% and subscribers pulled out. The four SMNRs that are operating — in China, Russia, and Argentina — cost 3-7 times more than predicted. The capitol costs per kilowatt hour for SMNRs are 41% higher than for large reactors. A 2022 study found that SMNRs increase the volume of nuclear waste by a factor of 2-30 times over conventional reactors.

In nuclear reactor operator Xcel Energy’s current 2024-2040 resource plan, its own modeling EnCompass software did not choose an SMNR when given the option to select one among future sources of energy generation. This proves even Xcel’s own software, when confronted with projected energy demands, cannot justify the cost of new nuclear infrastructure.

The data center connection

Data centers, used to power A.I. computing

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technology, can require an entire large-scale commercial reactor’s output equivalent. New nuclear reactors are not necessary to address the climate crisis, to cut out fossil fuels, or to meet the needs of the average person. New nuclear is being green washed and promoted because it is the silver bullet for the data center boom’s astronomical energy appetite.

The largest data centers can use as much electricity as the entire city of Minneapolis. If the total number of data centers proposed in Minnesota are built, they would require as much electricity as every home in Minnesota, or roughly 2.3 million houses. Many regulators and local governments do not have oversight in place for how to track and vet these data center projects. Georgia Power anticipates that data center growth will cause electricity demands to triple in the next decade.

But some communities are fighting back. In Tucson, Arizona, local leaders voted down Amazon’s Project Blue data center proposal. In Missouri, the St. Charles City Council unanimously adopted a year-long moratorium for data center proposals in the area. In Denver, local resistance and the city council halted a SMNR 48 hours after it was proposed.

Hundreds of millions of taxpayer dollars are being handed out as subsidies to experimental SMNR developers. Additionally, Amazon, Google, Meta, and Microsoft are directly investing in or are in negotiations to purchase power from SMNR start-ups. Such tech figureheads as Bill Gates, OpenAI’s Sam Altman, Peter Thiel (a co-founder of PayPal and Palantir Technologies), Unity software’s David Helgason, and Amazon’s “Climate Pledge Fund” are privately funding SMNR research and development.

Why the moratorium matters

Despite opposition from the Prairie Island Indian Community — the closest reservation to a nuclear reactor and temporary waste storage in the U.S. — and environmental groups, the 1994 Minnesota state legislature passed a law permitting nuclear waste storage onsite at the Prairie Island reactors. This 1994 law included the nuclear moratorium — which bans consideration of proposed new nuclear reactors. Xcel requested additional waste storage at Prairie Island in 2003, 2005, 2008, 2023, and 2024. Over the last 55 years, the Prairie Island Indian Community has received only a fraction of the hundreds of millions of dollars given to other towns or communities near the reactors.

A few stalwart pro-nuclear legislators have tried over the last thirty years to repeal the moratorium. Several bills failed in 2025 and are likely to be introduced in the next session. The moratorium is a crucial point in keeping SMNRs and more data centers out of the state of Minnesota and protecting fresh water. While a hyperscale data center can require millions of gallons of water a year, a small modular reactor can consume on average 1.5 billion gallons of water per-year for cooling, depending on the design and size of the reactor.

The severe health and environmental risks posed by highly radioactive nuclear fuel waste was at the heart of the creation of the moratorium in

See Data Centers and Nuclear Moratorium, p. 7



Nukewatch joins other water protectors and environmental groups at the Rise and Repair Rally Day at the Minnesota capitol to protest the proposed repeal of the state’s 31-year-old nuclear moratorium.

Wisconsin: Ten Years without a Nuclear Moratorium

By Kelly Lundeen

The pendulum has come full swing in the ten short years since the dairy state went from guarding against further radioactive waste production to actively promoting nuclear power with taxpayer money. Between 1983 and 2016 Wisconsin was shielded from any new commercial nuclear reactors by a moratorium against reactor construction. Without the moratorium the red carpet has been laid down for a nuclear industry gala. The year 2025 saw state approval of pro-nuclear legislation and the first application to the Nuclear Regulatory Commission (NRC) for a small modular nuclear reactor, not to mention a license extension for the state’s only operating nuclear power facility (see “Wisconsin Reactors Approved to Run Til 80” on p.6).

Over the last five years Wisconsin has seen proposals for small modular nuclear reactors (SMNR) come, go, and pop up again. In 2021 Wisconsin-based Dairyland Electric Cooperative signed an agreement with NuScale Power to explore the potential deployment of NuScale’s so-called “advanced” reactor design. A similar proposal failed in Idaho when projected costs doubled and local stakeholders called off the deal. Policy director of Columbia Riverkeeper Kelly Campbell commented, “After losing their customer, NuScale’s stock plunged, it laid off nearly a third of its workforce, and it was sued by its investors and investigated for investor fraud. Then its CEO sold off most of his stock shares.” Even though the Wisconsin Dairyland-NuScale agreement has yet to be formally rescinded, the plan has faded away.

Other optimistic SMNR developers apparently don’t expect the same failure. Along the Lake Michigan shoreline sits the Kewaunee Power Station, Wisconsin’s most recently shuttered nuclear reactor. It closed in 2013 and is now undergoing decommissioning. A new plan could see a return to production of radioactive waste on Kewaunee grounds, along with a little electricity, potentially to be gobbled up by an adjacent data center. A SMNR has been proposed at the site after its owner EnergySolutions signed an agreement with the Canadian company Terrestrial Energy in December 2024 to explore deployment of its Integral Molten Salt nuclear reactor design. Molten salt explodes when exposed to air and reactors cooled with it have all failed. In April 2025, EnergySolutions submitted an early site permit to the NRC for a SMNR in partnership with WEC Group, parent company of WE Energies. The earliest projections for producing a bit of electricity are for 2038.

The future of incredibly expensive nuclear power depends on enormous government taxpayer handouts. Wisconsin’s legislature and governor have put bipartisan support behind this corporate welfare. Last summer the state approved “two bills to advance the state’s nuclear energy innovation by requiring a study of nuclear energy opportunities and potential nuclear power and fusion sites in Wisconsin and creating a Nuclear Power Summit Board designed to help advance nuclear power... and showcase Wisconsin’s leadership in the nuclear industry,” according to a press release from the office of Democratic governor Tony Evers. That means more subsidies to create a supply of unnecessary energy that will arrive to the market too expensive and too late when alternatives to fossil fuels are needed now.

The nuclear moratorium was a protection from the onslaught of radioactive threats facing the state today. Without a moratorium, states across the country like Wisconsin are left fighting on multiple fronts. Currently under review in the state legislature is a bill that would funnel taxpayer funds into building a new nuclear reactor. This kind of taxpayer bailout for the nuclear industry would have been impossible in Wisconsin a decade ago.

— WMTV15, Oct. 15; Wisconsin Public Radio, May 14; EnergySolutions, May 13, 2025; Oregon Capital Chronicle, Oct. 29, 2024