NORTHWEST ENVIRONMENTAL ADVOCATES

**Testimony of Eugene Rosolie, Northwest Environmental Advocates,
before the Oregon House Climate, Energy, and Environment Committee, on
House Bill 2410
February 27, 2025**

"***We can't solve problems by using the same kind of thinking we used when we created them***."

Albert Einstein

Northwest Environmental Advocates urges the Oregon House Climate, Energy, and Environment Committee to reject House Bill 2410. This bill is nothing more than an attempt to circumvent voters' enactment of the 1980 Ballot Measure 7, in which Oregon voters supported requiring a federally-licensed, permanent nuclear waste disposal facility prior to new nuclear facilities and voter approval for nuclear power plant certification. Additionally, HB 2410 will set a bad precedent, encouraging other Oregon counties to request similar carve-outs for nuclear pilot projects and various other types of projects that are now prohibited or constrained by state law. HB 2410, and other proposed bills to override the 1980 Ballot Measure, is a distraction to making real progress in reducing carbon dioxide (CO2) emissions, its ostensible target.

In March 2023, the International Panel on Climate Change (IPCC) released the final component of its Sixth Assessment Report with a clear message: we must act now, or it will be too late. Oregon must take this message seriously, and not be distracted by energy sources that will not reduce our CO2 emissions.

More recently, the Rhodium Group concluded:

> The modest 2024 decline underscores the urgency of accelerating decarbonization in all sectors. To meet its Paris Agreement target of a 50-52% reduction in emissions by 2030, the US must sustain an ambitious 7.6% annual drop in emissions from 2025 to 2030, a level the US has not seen outside of a recession in recent memory.

We owe it to today's children and to future generations to change our thinking and disregard the stranger's bearing gifts. We can do this by focusing on developing local resources such as rooftop solar, energy efficiency, and demand response; these are programs that are ready to be implemented now.

The nuclear industry has been good at its public relations program. One thing they never do is admit there are questions or possible downsides to what they are selling, and there are many. Following are some of the issues that the nuclear industry never talks about.

Resilience

The nuclear industry claims that the new advanced reactors will provide 24/7 power and assist in assuring a reliable grid. Two reports by the Government Accountability Office (GAO) highlight the risks faced by the electric grid now and into the future. One report, issued in 2021, identified three major risks to the electric grid: (1) extreme weather and climate change; (2) cyber and physical attacks; and (3) electromagnetic events. (GAO, Electricity Grid Resilience, GAO-21-10503, September 2021.)

A more GAO recent report, in 2024, focused on nuclear power alone. GAO identified the risks from climate change to the operation of nuclear power plants to include: loss of offsite power, damage to systems and equipment, and diminished cooling capacity, potentially resulting in reduced operations or plant shutdowns. (GAO, NRC Should Take Actions to Fully Consider the Potential Effects of Climate Change, GAO-24-106326, April 2024.)

Drought caused by climate change has already affected nuclear plant operations in the Southeast United States, Illinois, and Minnesota in both 2006 and 2007. And, in July 2012, heat waves and drought forced nuclear plants in Ohio and Vermont to slow output. In 2007, 2010, and 2011, the Tennessee Valley Authority had to reduce power output from its Browns Ferry Nuclear Plant because river temperatures were too high to receive the plant's discharge water without causing ecological risks. This situation has occurred in France as well, resulting in reduced power outputs.

The vulnerability of power sources that rely on transmission lines argues for significant investment in less centralized energy sources. Wildfires that are increasing because of climate change have increasingly affected transmission lines, resulting in service cuts to thousands of end users. For instance, in 2021, summer wildfires were responsible for 30 outages due to effects on Bonneville Power Administration (BPA) transmissions lines. During the heat dome in 2021, BPA was considering rolling blackouts for the City of Richland because of the lack of transmission capacity. Transmission was an issue as well during the January 2024 freeze when a major transmission line was out of service.

Water Quality, Flow, and Impacts on Salmon

The combination of new nuclear power and increased numbers of data centers in the Pacific Northwest spells bad news for Columbia River salmon and human health. Both will increase chemical and temperature pollution. And both will increase the demand for water in a future that will have a lot less water to spare. Removing more water from the Columbia and/or discharging more sources of warm water to the river is contrary to Oregon's commitment to protecting and recovering threatened and endangered salmon and steelhead.

We already have a problem with Columbia River water temperatures that is on a trajectory to become worse. In 2021, the U.S. Environmental Protection Agency (EPA) issued a Total Maximum Daily Load (TMDL) clean-up plan for temperature in the mainstem Columbia River, which now routinely experiences temperatures over 23° C (73.4° F), as compared to Oregon's water quality standard of 20° C, a temperature that the Oregon Department of Environmental Quality, the EPA, and the National Marine Fisheries Service all agree is only protective if salmon have access to cold water refuges. EPA has evaluated past and future climate change impacts, finding that since the 1960s climate change has already increased Columbia River temperatures by approximately 1.5° C. In its Columbia River TMDL, EPA predicts that temperatures will further increase "by approximately 1.0°C by 2040 and 2.0°C by 2080, compared to a baseline period of 1993-2011." This clean-up plan relies on so-called cold water refuges in the Columbia that are created by the input of tributaries such as the Umatilla and Deschutes Rivers that themselves have temperatures that are not protective of salmon. And EPA has estimated that these tributaries, too, will increase due to climate change "between 0.6°C and 0.7°C relative to Columbia River temperatures."

The future discharges to the Columbia River from the operation of so-called "Advanced Nuclear Reactors" proposed are unknown, but it is safe to assume that they, too, will pollute air and water with chemicals, radioactive materials, and temperature. The data centers these power plants are intended to serve are huge water consumers. According to a recent study by J.P. Morgan and ERM Sustainability, large data centers can use between 1 to 5 million gallons of water per day, which is comparable to the amount used by a town of 10,000 to 50,000 people. Not only will streams warm but summer flows will continue to shrink. The National Climate Assessment estimates that by 2060 there will be a 10–50 percent increase in water withdrawals in the Pacific Northwest due to climate change alone. We should not be encouraging new sources of massive water consumption.

Costs

A 2023 study by the Columbia University Center on Global Economy estimated new US reactor costs will generally range from $3,000/kilowatt (kw) to $6,200/kw. Another report by Energy Intelligence estimated the cost of solar power with batteries at $1,738/kw and wind power with batteries at $2,319/kw, compared with nuclear power at a whopping $6,870/kw. Not surprisingly, the IPCC in 2023 concluded that solar was the least expensive and most effective way to meet global CO2 2030 targets, and nuclear power was rated next to last.

Conclusion

New nuclear power plants are not the solution to climate change and, if permitted, will exacerbate water and pollution problems in Oregon. The Trump Administration's recent firing of nuclear safety workers and roll back of environmental regulations should be sufficient additional reason for this Committee to reject HB 2410.

Additional Resources

Nuclear hype ignores high cost, long timelines | IEEFA

7 reasons why nuclear energy is not the answer to solve climate change | One Earth New Nuclear

Energy: Assessing the National Security Risks

Energy Efficiency And Demand-Response: Tools To Address Texas' Reliability Challenges: Summary

With Heat From Heat Pumps, US Energy Requirements Could Plummet By 50% - Clean Technica

Nuclear Colonialism: Indigenous Communities Address Government Human Rights No

Breakthroughs in Nuclear: It's Not Cheaper, Faster, or Safer | Nasdaq Ratepayers First: The

Economic Case Against Nuclear's Data Center Dreams

Five Things the "Nuclear Bros" Don't Want You to Know About Small Modular Reactors - Union of Concerned Scientists

The Rise and Fall of NuScale: a nuclear cautionary tale, Opinion Editorial in the Capital Chronicle

Columbia Riverkeeper responds to Amazon's plan to build nuclear reactors interview on Fox 12 Now

WA nears energy crisis as Amazon funds nuclear reactors, sparking controversy Seattle's Fox 13 Television

What's the Deal with New Nuclear? Columbia Riverkeeper's latest webinar with expert panelists M.V. Ramana, Leona Morgan (Diné), and Joshua Frank