

Submitter: Andy Harris  
On Behalf Of: Oregon Physicians for Social Responsibility  
Committee: Senate Committee On Energy and Environment  
Measure, Appointment or Topic: SB215

Chair Sollman, Vice-Chair Smith and members of the Committee:

My name is Dr Andy Harris, and I am testifying for Oregon Physicians for Social Responsibility in opposition to SB 215 and 216.

Thank you for the opportunity to discuss our concerns about nuclear energy. I'll skip issues that were already discussed at Wednesday's hearing and focus on health issues.

Uranium mining and milling is usually done on Indigenous lands, exposing workers and communities downwind to ionizing radiation that can cause cancer, birth defects, damaged DNA, leukemia, cardiovascular disease, cataracts, and thyroid disease.

Nuclear reactors of any size are at risk for human error, malfunction and radiation leaks, which may lead to meltdowns and disasters, such as at Three Mile Island (1979), Chernobyl (1986) and Fukushima (2011).

All nuclear reactors, including small modular nuclear reactors (SMRs), use a process of nuclear fission, and all produce radioactive waste, some of which persists hundreds of thousands of years. By contrast, the life span of onsite steel and concrete storage containers is generally about 100 years. The US still does not have a permanent underground waste repository.

Nuclear power technology may be subverted to development of nuclear weapons by terrorists and rogue nations. X-energy's proposed SMR requires HALEU reactor fuel that is more highly enriched at 5-20% U-235 than current light water reactors at 3-5% U-235.

The earliest that SMRs could be developed and constructed is 10-15 years. But time is running out on climate change as we have witnessed with wildfires, heat domes, severe storms, flooding, droughts, rising sea levels, and increasing infectious diseases.

Renewable energy, especially solar and wind, are growing rapidly, accounting for 19% of electricity in Oregon (2023 figures). Wind and solar power can ramp up far more quickly and economically than nuclear power.

Renewable clean energy projects are currently being delayed because of an

outdated power grid. Updating the grid would bring many more solar and wind projects online at a fraction of the cost of nuclear energy.

Major improvements in battery storage are occurring and will continue to be a key factor in providing a stable source of energy.

SMRs and adjacent radioactive waste containers are a risk for terrorist attacks using military drones. A plume of radioisotopes would make part of the Northwest uninhabitable.

SMRs are touted as “clean energy” by the nuclear industry. But dirty fossil fuels are a key part of the process in the mining and milling of uranium, construction of reactors, and use of heavy equipment for site prep, and building waste storage facilities.

Water is the usual means of cooling nuclear reactors, but it requires returning heated water to rivers or the ocean. In the Northwest where water temperatures have already risen due to dams, climate change and clearcutting near streams, hot waste water will further compromise salmon runs and other aquatic life.

Nuclear is not only the most expensive source of energy, it depends on government, i.e. taxpayer, funding to extract and mill uranium, to subsidize construction costs, to clean up radioactive waste, and to indemnify reactors against radioactive leaks and meltdowns. No private insurance companies will insure nuclear reactors.

Chris Hansen estimated that the cost of nuclear power is greater than \$10,000 per kw/hr. A Columbia University study found that nuclear energy will have a marginal role in meeting US energy needs unless it can sell for \$6,200.

Finally, small modular nuclear reactors are experimental, an unproven entity since none have been built in the U.S.

Thank you for considering these concerns about nuclear energy in Oregon.