March 23, 2021

Oregon Progressive Party

Position on Bills at 2021 Session of Oregon Legislature:

Dear Committee: **SB 360: Oppose**

The Oregon Progressive Party opposes this bill, which would:

- Exempt "small" modular reactors from certain siting restrictions that apply to nuclear-fueled thermal power plants.
- Require small modular reactors to be sited in city or county where electors of city or county have approved small modular reactors being located in city or county.
- Require emergency planning zones for small modular reactors to be located in county where electors of county have approved small modular reactors being located in county.
- Require proposed disposal of high-level radioactive waste by small modular reactor to comport with process approved or adopted by United States Nuclear Regulatory Commission.

This bill is entirely contrary to the expressed will of the Oregon electorate and would subject Oregonians to high levels of risk from the generation of large quantities of high-level radioactive waste and even reactor meltdowns.

Let's assume that the Nuscale design could actually be built and operated. The Nuscale design is simply a small pressurized light water reactor ("PWR") fueled with low-enriched uranium. Of the 96 operational commercial nuclear reactors in the United States, 64 are PWRs fueled with low-enriched uranium. The Three Mile Island units, one of which melted down, were also PWRs. The Nuscale design, if it works, would produce the same sort of high-level radioactive waste as the existing reactors. Whether it would also pose the same threat of meltdown is not yet known.

The NRC Advisory Committee on Reactor Safety, which routinely rubber-stamps safety analyses of reactors, stated in June 2020 that it “cannot reach a final conclusion on the safety of the NuScale design until the issue of the potential for a reactivity insertion accident” — a sudden increase in fission that cannot be halted — “is resolved to our satisfaction.” Sudden increase in fission" can lead to

meltdown. The ACRS further stated: "A boron dilution issue was identified and remains open. We are concerned that this class of events could lead to a potential reactivity insertion accident and core damage."

SB 360 would exempt the Nuscale reactor (and other small nuclear reactors) from ORS 469.595, 469.597, 469.599 and 469.601--the standards for allowing the siting of new nuclear power plants in Oregon adopted by voter initiative in 1980:

> **469.595 Condition to site certificate for nuclear-fueled thermal power plant.** Before issuing a site certificate for a nuclear-fueled thermal power plant, the Energy Facility Siting Council must find that an adequate repository for the disposal of the high-level radioactive waste produced by the plant has been licensed to operate by the appropriate agency of the federal government. The repository must provide for the terminal disposition of such waste, with or without provision for retrieval for reprocessing. [1981 c.1 §3]
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> **469.597 Election procedure; elector approval required.** (1) Notwithstanding the provisions of ORS 469.370, if the Energy Facility Siting Council finds that the requirements of ORS 469.595 have been satisfied and proposes to issue a site certificate for a nuclear-fueled thermal power plant, the proposal shall be submitted to the electors of this state for their approval or rejection at the next available statewide general election. The procedures for submitting a proposal to the electors under this section shall conform, as nearly as possible to those for state measures, including but not limited to procedures for printing related material in the voters' pamphlet.
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> (2) A site certificate for a nuclear-fueled thermal power plant shall not be issued until the electors of this state have approved the issuance of the certificate at an election held pursuant to subsection (1) of this section. [1981 c.1 §§4,5]
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> **469.599 Public Utility Commission's duty.** The Public Utility Commission shall not authorize the issuance of stocks, bonds or other evidences of indebtedness to finance any nuclear-fueled thermal power plant pursuant to ORS 757.400 to 757.460 until the Energy Facility Siting Council has made the finding required under ORS 469.595. [1981 c.1 §6]

Those include the requirement that "an adequate repository for the disposal of the high-level radioactive waste produced by the plant has been licensed to operate by the appropriate agency of the federal government." No such repository exists. As the Nuscale reactor would be merely a small PWR with low-enriched uranium fuel, it would produce the same high-level radioactive waste waste that voters in 1980 were concerned about. Despite the passage of over 40 years, there still exists no repository for disposal or even long-term storage of the high-level radioactive waste produced by PWRs. SB 360 requires only that its high-level radioactive waste be disposed of in accordance with NRC processes--which means leaving the waste at the site of the reactor. That is exactly what Oregon voters prohibited.

Also, SB 360 would exempt quite large nuclear reactors. Its threshold for exemption is 300 MW of electric output. Nuscale says its reactor would be 77 MW or smaller. So why is the threshold 300 MW?

But Nuscale has not built even one reactor. The CEO of its previous largest investor, Kenwood Group, in 2011 pleaded guilty to federal charges that Kenwood Group was an illegal Ponzi scheme that cheated investors of over $382 million. He was sentenced to 13 years in prison.

Admiral Rickover, father of the nuclear Navy, would say that the Nuscale reactor is an "academic" reactor. He wrote in 1953:

An academic reactor or reactor plant almost always has the following basic characteristics: (1) It is simple. (2) It is small. (3) It is cheap (4) It is light. (5) It can be built very quickly. (6) It is very flexible in purpose ('omnibus reactor'). (7) Very little development is required. It will use mostly off-the-shelf components. (8) The reactor is in the study phase. It is not being built now.

On the other hand, a practical reactor plant can be distinguished by the following characteristics: (1) It is being built now. (2) It is behind schedule. (3) It is requiring an immense amount of development on apparently trivial items. Corrosion, in particular, is a problem. (4) It is very expensive. (5) It takes a long time to build because of the engineering development problems. (6) It is large. (7) It is heavy. (8) It is complicated.

The tools of the academic-reactor designer are a piece of paper and a pencil with an eraser. If a mistake is made, it can always be erased and changed. If the practical-reactor designer errs, he wears the mistake around his neck; it cannot be erased. Everyone can see it.

The academic-reactor designer is a dilettante. He has not had to assume any real responsibility in connection with his projects. He is free to luxuriate in elegant ideas, the practical shortcomings of which can be relegated to the category of 'mere technical details.' The practical-reactor designer must live with these same technical details. Although recalcitrant and awkward, they must be solved and cannot be put off until tomorrow. Their solutions require manpower, time and money.

Unfortunately for those who must make far-reaching decisions without the benefit of an intimate knowledge of reactor technology and unfortunately for the interested public, it is much easier to get the academic side of an issue than the practical side. For a large part those involved with the academic reactors have more inclination and time to present their ideas in reports and orally to those who will listen. Since they are innocently unaware of the real but hidden difficulties of their plans, they speak with great facility and confidence. Those involved with practical reactors, humbled by their experience, speak less and worry more.

Admiral Rickover developed small light water reactors for submarines, aircraft carriers and ice breakers. Nuscale's design is a small light water reactor. So Rickover's warnings seem particularly appropriate here.

Further, today any exemption from the 1980 requirements must be referred to the voters of the state for approval. This is appropriate, because the environmental risks of nuclear reactors certainly extend to the people, land, and economy of the entire state. But SB 360 would require referral only to the voters of the city or county whose governing body has approved siting of reactors. This would allow the voters of any small city or county to impose substantial risks upon the entire state, while disenfranchising 99% of more of the state's voters.

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