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Nuclear Power in Oregon?

A Fact Sheet on Small Modular Nuclear Reactors

What are Small Modular (Nuclear) Reactors?

- According to the World Nuclear Association: “Small modular reactors (SMRs) are defined as nuclear reactors, generally 300MWe equivalent or less, designed with modular technology using module factory fabrication, pursuing economies of series production and short construction times.” (“Small Nuclear Power Reactors” 1/2019.) The “economies” of SMRs are unproven, are proposed to be used to generate electricity, and can be combined with other SMRs to increase total electrical output.

What is NuScale/Fluor’s Small Modular Nuclear Reactor (SMNR) Design?

- NuScale is a publically traded company headquartered in Portland, Oregon whose largest shareholder (55%) is Fluor Corporation. (NuScale’s website: <https://www.nuscalepower.com/>.)
- NuScale’s SMNR design, originating at Oregon State University, is a modular pressurized light water nuclear reactor using 3-5% enriched Uranium 235 reactor fuel.
- In 2016, NuScale submitted its SMNR Design Certification Application to the Nuclear Regulatory Commission (NRC) for approval. The NRC issued a Final Safety Analysis Report on 8/28/20. (“Application Review Schedule for the NuScale Design” on NRC’s website: <https://www.nrc.gov/>.) On 11/10/20, NuScale announced a 25% power increase in its reactor design. On 1/19/23, the NRC approved by rule NuScale’s standard reactor design. Safety issues are still outstanding.
- A SMNR module is designated “small” because each module will be approximately 76-feet tall, 15-feet in diameter and projected to produce 77 MWe. It would be manufactured and assembled in a factory, **yet to be built**, and then transported to a plant site.
- The SMNR can be combined with other modules at the nuclear plant site and connected to a single control room. Proposed reactor combinations describe 6, 8 and 12 combined units. A 12 unit 924 MWe power station would be equal to approximately 80% of the power output of the decommissioned 1,130 megawatt Trojan Nuclear Power Plant. Most likely, SMNRs would be installed in multiple units becoming far from “small.”
- Nuscale’s reactor design produces the same kind of high-level nuclear waste temporarily stored at nuclear plant sites across the country. This waste was never intended to be stored indefinitely at nuclear plant sites. All commercial high level nuclear waste, produced since 1957, awaits transport to a federally licensed permanent waste repository **that still doesn’t exist**.



Current Oregon law regarding nuclear power.

- In 1980, Oregon voters approved Ballot Measure 7, prohibiting new construction and operation of nuclear power generating plants statewide until the following conditions are met:

ORS 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

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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.

ORS 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.

(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.

Can Oregon's 1980 ballot measure law be changed by the Oregon Legislature?

Yes, it is a statutory law! In the last four "full" Oregon Legislative sessions of 2017, 2019, 2021, and 2023 multiple bills were sponsored on behalf of NuScale, either proposing to **repeal** the entire ballot measure law "or" **exempt** Small Modular Nuclear Reactors and reduce the geographic area requiring voter approval from statewide to just a county or a city where they might be built. This ignores the fact that accidental radiation releases are not restricted by artificial boundaries. Also, accidents can happen during transport of reactor modules, both before and after the fissioning of their nuclear fuel, on routes through cities and counties where voters would not be allowed to vote in the reduced site approval process. **Oregon's 2025 legislative session has four bills sponsored to repeal the 1980 ballot measure law and five bills to exempt SMNRs. The nuclear industry is back!**

What will SMNRs cost and do we need them?

- From the mining and enrichment of uranium, the construction, operation, and decommissioning of nuclear plants, to the transportation and ultimate disposal of large amounts of nuclear waste, the nuclear fuel cycle has been plagued with high costs, hidden subsidies, health and environmental impacts, and unresolved waste disposal problems.
- From its beginning, the nuclear industry mastered the art of public relations, promoting endless promises of benefits - "power too cheap to meter," while leaving taxpayers and the public "holding the bag" with cost overruns and broken promises. Now the nuclear industry is promoting a resurgence of new nuclear technology, unproven reactor designs to address climate change, and the need for "base load power" to back up renewable energy, combat global poverty, and conduct business as usual. As always the last thing in their play book is any true accountability. **Substituting one failed energy technology for another is not a solution to catastrophic climate change!**
- No one knows what the true costs of SMNRs will be, because there's no experience with their actual operation. We are asked to continue the nuclear experiment, trust in its never ending public relations, hope the outcome will justify its promises and inherit its continuing failures to meet them.

CONCLUSION: 50 years ago, when the Trojan Nuclear Plant was built, the first facility to operate was its Visitors Information Center. At this high tech media operation, free public tours were offered with colorful video presentations and fancy brochures about the promises of the nuclear fuel cycle, how Trojan was to operate, and how its high level nuclear waste would be disposed. Its reality proved different Today Trojan is gone, prematurely shut down by malfunctioning reactor components. **Its high level nuclear waste remains onsite, awaiting a permanent high level nuclear waste repository that still does not exist.** Even if a permanent repository did exist, no one alive today will know if it can successfully store this waste for the tens of thousands of years it must be removed from the environment. Future generations, deriving no benefit from this toxic waste, are the ones who will know! **The message we send them, from what we leave them, is up to you!**

And the cost of a thing is the amount of what I will call life which is required to be exchanged for it, immediately or in the long run.

– Henry David Thoreau