

EXPERT REPORT: UAMPS MUNICIPALITIES' INVESTMENT IN NUSCALE SMR NUCLEAR PROJECT "NOT PRUDENT" IN VIEW OF RISING COSTS, OTHER RISKS & CHEAPER ALTERNATIVES

More than 30 UT, ID, NV, NM & CA Towns in UAMPS System "Could Be on the Hook for Extreme Cost Overruns & Project Cancellation"; Renewables Combined With Energy Storage Seen As Far Cheaper, Safer & Faster Route.

SALT LAKE CITY – September 2, 2020 -- A leading world expert on small modular reactors (SMRs) issued a report today warning that more than 30 municipalities in Utah, Idaho, Nevada, New Mexico and California participating in the Utah Associated Municipal Power Systems (UAMPS) small modular nuclear project promoted by Oregon-based NuScale Power could end up being left holding the bag due to runaway costs, uncertain regulatory review, fickle taxpayer subsidies, and a host of other risks.

The report, titled "[Eyes Wide Shut](#)," was issued by [Dr. M.V. Ramana](#), who is the Simons Chair in Disarmament, Global and Human Security and Director of the Liu Institute for Global Issues at the School of Public Policy and Global Affairs, University of British Columbia in Vancouver, Canada. He is the author of several reports, articles and peer-reviewed papers on small modular nuclear reactors in journals such as Nuclear Technology, Energy, Science, Technology, & Human Values, Energy Policy, IEEE Spectrum, and Energy Research and Social Science. Dr. Ramana is a member of the International Panel on Fissile Materials, the International Nuclear Risk Assessment Group, and the team that produces the annual World Nuclear Industry Status Report.

The Ramana report concludes: **"As has been true with other recent nuclear power projects in the US and in Europe, UAMPS members could be on the hook for extreme cost overruns and project cancellation, making it a risky proposition for them to continue investing in an untested, first-of-its-kind nuclear power facility. With nuclear power becoming more expensive in general, the dramatic increase in the construction costs of the NuScale project, the uncertainty in the outlook for electricity demand, and renewables and storage becoming increasingly cheaper, investment in the NuScale project is simply not prudent."**

Key report findings include the following:

- **PROJECT COST.** The estimated costs of the NuScale reactor design have been consistently going up. Just in the last five years, the estimated construction cost has gone up from around \$3 billion in 2015 to \$6.1 billion in 2020. And there are several reasons to expect that the NuScale reactor system, when transferred from paper to the real world, would cost even more than the currently doubled figure.
- **SCHEDULE DELAYS.** NuScale Power was supposed to deliver its first working small modular reactor in 2015. After a series of delays, it is now forecasting the first UAMPS reactors in 2029-2030 – unless there are further delays, which are likely.
- **COST OF ELECTRICITY.** UAMPS power costs were originally projected at \$65 per megawatt hour and then reduced to \$55 per megawatt hour. But other utilities have indicated that NuScale SMRs would cost \$94-\$121 per megawatt hour. Even if the UAMPS/NuScale electricity production costs are correct, they would still far exceed the cost of renewables, which are moving in the opposite direction. A renewables portfolio could be up to 60 percent less expensive than the UAMPS/NuScale project. Even with the cost of battery-based energy storage added in, renewables would still be considerably cheaper at \$39 per megawatt hour.
- **NUCLEAR WASTE.** The problems of nuclear waste—its long life and the challenge of stewarding it for hundreds of thousands of years—are well known. This will be a problem for NuScale too because just like large reactors, the proposed NuScale reactor design will produce radioactive wastes of many

kinds. The problem could even be a bit more acute; proposed reactor designs like NuScale will produce more, not less, nuclear waste per unit of electricity they generate.

Dr. Ramana said: **“UAMPS members may wish to consider ending their pursuit of small modular nuclear reactors and avoid the sunk costs of a project that is very unlikely to achieve its target price or produce electricity at a cost competitive with proven alternatives. Pursuing cheaper, currently available solar, wind, energy storage (batteries), and energy efficiency would be a more reliable path for UAMPS to shift to a carbon-free energy future.”**

Dr. Edwin Lyman, Director of Nuclear Power Safety at the Union of Concerned Scientists, pointed out that the NuScale reactor has serious design flaws that contradict the company’s claim that the reactor is inherently and passively safe, as documented by recent concerns raised by a U.S. Nuclear Regulatory Commission technical staff member. Dr. Lyman added: **“NuScale has aggressively sought exemptions from critical safety and security requirements to try to reduce the reactor’s high price tag. But as Dr. Ramana has demonstrated, cutting corners has only increased NuScale’s safety risk without making it affordable.”**

Dr. Lyman is an internationally recognized expert on nuclear power safety and security. He is a member of the Institute of Nuclear Materials Management, and has testified numerous times before Congress and the Nuclear Regulatory Commission. Dr. Lyman also co-authored the critically acclaimed book, *Fukushima: The Story of a Nuclear Disaster* (New Press), published in February 2014.

Other key issues highlighted in the Ramana report are:

- **SAFETY ISSUES.** NuScale is not planning to build just one small reactor; it is planning to build a group of 12 at the same site. As a result, an accident at one unit might either induce accidents at others or make it harder to take preventive actions at others. Further, if the underlying reason for the accident is a common one that affects all of the reactors, such as an earthquake, it is possible that many, or even all, units could undergo accidents. In that case, the combined radioactive inventories are sizable, even in comparison with a large reactor. Some of these issues were observed in the Fukushima multiple reactor meltdown disaster.
- **REGULATORY UNCERTAINTY.** Despite what NuScale might claim, there is no guarantee that the reactor system will receive all necessary regulatory approvals. The U.S. Nuclear Regulatory Commission and its Advisory Committee on Reactor Safeguards have flagged unresolved issues with the NuScale design that will have to be resolved at a future stage of licensing.
- **FUNDING ISSUES.** The UAMPS/NuScale project is heavily dependent on federal power purchase agreements and a steeply rising amount of tax-dollar-supported subsidies. Contrary to NuScale/UAMPS assurances, there is no way to guarantee the future flow of such subsidy funds. As the on-again, off-again Yucca Mountain project illustrates, federal support for nuclear energy can be fickle and is subject to withdrawal at any time.
- **PARENT COMPANY.** Another problem with the UAMPS proposal is uncertainty about the future of NuScale’s parent company: Fluor Corporation. Between October 2018 and August 2020, the company lost 80 percent of its value on the New York Stock Exchange. These losses are, in large part, the result of bidding too low on fixed price contracts and not accurately revealing their financial status to stockholders, triggering an SEC investigation this year. The company also disclosed that the Justice Department has subpoenaed documents concerning a fixed-price federal project.

The proposed NuScale reactor design is being considered for possible construction at the expense of Utah Associated Municipal Power Systems, “a political subdivision of the State of Utah that provides comprehensive wholesale electric-energy, transmission, and other energy services, on a nonprofit basis, to community-owned power systems... [in] Utah, California, Idaho, Nevada, New Mexico and Wyoming”. The proposed NuScale design is to be a pressurized water reactor that is currently supposed to produce

60 megawatts (MW) of electrical power, although it is more correct to describe it as a 720 MW nuclear power plant since it is intended to be built only in a cluster of 12 units.

The “Eyes Wide Shut” report was supported by Oregon Physicians for Social Responsibility. Dr. Ramana was given complete editorial freedom and is solely responsible for the content of the report.

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EDITOR’S NOTE:

The Ramana report and streaming video for today’s news event are available at <http://bit.ly/UAMPSNuScale>.