

Small modular nuclear reactors may be future of energy in Idaho

BY JERRY BRADY

OCTOBER 17, 2019 06:19 PM, UPDATED OCTOBER 17, 2019 06:19 PM

This month, the company that supplies most of southeastern Idaho's electricity, [PacifiCorp](#), announced it will steadily switch out of coal and meet most of its needs with solar and wind, while installing batteries for use when the sun doesn't shine and the wind doesn't blow. One Western utility after another has made a similar announcement this year, including [Idaho Power](#). Our question today is: With such stunning abandonment of coal for renewables, is there still a need for nuclear?

Utilities in 47 Western communities are saying yes, there is.

Public utilities in cities such as Idaho Falls and rural cooperatives such as in Mackay and Salmon would purchase from a cluster of small, simplified, modular reactors that shut themselves down when unsafe and dispose of spent fuel in ways never imagined when the nuclear age began or since. Fittingly, they will be built where [electricity was first delivered from a nuclear reactor, from the desert west of Idaho Falls to the town of Arco in 1953](#).

The flight to renewables is coming on fast. PacifiCorp, with 1.9 million customers, will install 3000 megawatts of wind and 3500 megawatts of wind. Excel, with three million customers from Minnesota to Texas, will become 80 percent renewable by 2030. West coast utilities are on an even steeper curve.

Utilities are choosing wind, solar and battery storage in spite of the abundance of natural gas in the region because they are the cheaper, cleaner and popular with customers. A similar story is emerging in the Southeastern United States and elsewhere, all good news for the planet.

If this is the future, why would 47 utilities buy some of their power from small nuclear reactors in Idaho?

The reactors in question will be built by NuScale (www.nuscalepower.org), an Oregon company using a design conceived by an Oregon State physicist to address the three greatest vulnerabilities of nuclear: safety, disposal of spent fuel and long-term cost.

Each NuScale reactor generates 80 megawatts. They will typically be built in clusters and buried beneath a few acres of earth, use passive principles to shut down as needed and use less water for cooling. By building modularly in factories and shipping to sites, costs can be reduced.

The 47 utilities — in Idaho, Utah, California, Nevada and New Mexico — have until 2023 to decide to purchase from a cluster of 12 reactors generating 720 megawatts of electricity (470,000 homes). Final approval by the federal Nuclear Regulatory Commission is expected next year, with start-up in the mid-2020's.

These utilities will use nuclear to replace the coal Western utilities are so rapidly abandoning. They expect to pay something under \$50 per kilowatt hour, which is more than double solar and wind's current cost, and that cost could decline. However, NuScale is expected to operate for 60 years, which should make it less expensive than the projected cost of natural gas. With nuclear as a base, utilities can then add solar and wind without the cost of battery backup.

Let's be clear: NuScale's first reactors are made possible by federal dollars — \$380 million since 2013 — to go with substantial private capital. Utilities will receive \$63 million for licensing and siting, which surely influenced their decision. This will not be repeated.

NuScale is one of many small, "fourth generation," modular reactors (SMRs) emerging in Canada, Russia, China and elsewhere. Why is this?

A simple answer is climate. Coal is the major reason the planet is hotter and more dangerous, and fourth-generation nuclear is one remedy.

Coal may be phasing out in the United States, but its use is still growing elsewhere. China and India burned more coal than ever the last two years, and coal shipments over water increased 2 percent last year worldwide.

Countries developing nuclear aren't crazy. China is the world leader in solar, wind, batteries and conventional nuclear. Yet China cannot get out of coal without substituting small nuclear. India's need is even more dire.

Overall, the world economy will triple to \$292 trillion by 2050. Renewables cannot meet that demand alone. Every environmentally acceptable resource, including SMRs, must be marshaled to meet the greatest challenge of our time. The American West may not need many new nuclear plants because sun and wind are abundant here but the world is another matter.

NuScale's prime market will likely be abroad. It recently signed a partnership with a Czech utility, adding to relationships in Romania, South Korea, and France and with many international suppliers.

One of Idaho's truly great contributions to the world was to invent the source of 20 percent of nation's electricity, the nuclear reactor, 66 years ago. The U.S. Navy depends on technology developed in the Idaho desert and has never had a serious accident. Yet unsafe practices led to dangerous conditions on the desert that have split eastern Idaho from the rest of the state for decades.

As publisher or president of the Post Register newspaper in Idaho Falls for 25 year I took seriously the frightening description of waste at the Idaho National Laboratory being "poised over the drinking water for 300,000 people." The need for action was clear. Our paper supported Govs. Cecil Andrus and Phil Batt as they gained state control over the Department of Energy and urged a serious measure of state control and cleanup, often against local opposition.

However, the Batt Agreement was signed in 1996. In all, \$9 billion have been spent since then cleaning up past mistakes. Thousands of eastern Idahoans have lost or will soon lose their jobs because their cleanup mission has been accomplished, with just one major task left to be completed.

With state regulation in place and with significantly improved technology, might NuScale enjoy a measure of the trust in Idaho lost in the last generation?

Understanding all this is deeply important. The climate challenge demands a higher level of honesty and accountability from all of us. Please consider resetting your own thinking

— or taking a new look — when the words “nuclear” and “Idaho” appear together. As our planet grows warmer while needing of ever more energy, consider the welfare of the entire world.

Jerry Brady was president of the Post Company in Idaho Falls, a media company that was one-third employee-owned at the time of its sale in 2015.