UAMPS Utah Associated Municipal Power Systems
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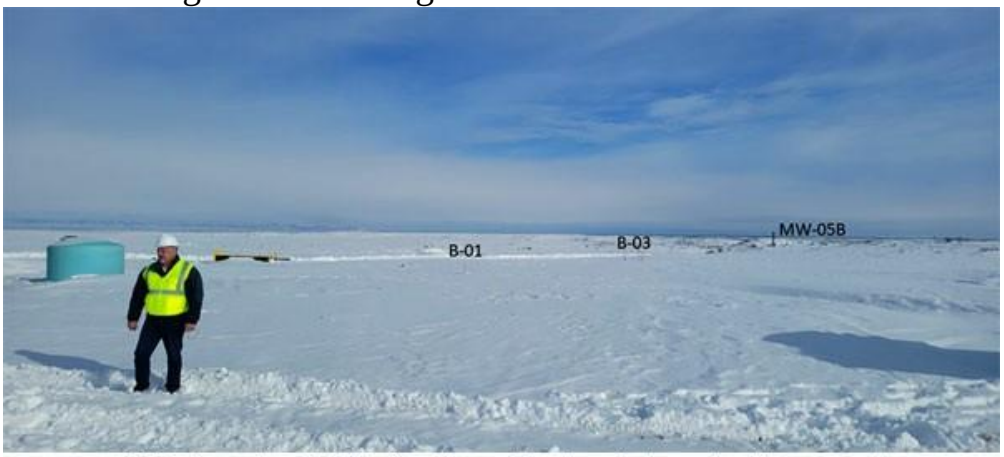
January Carbon Free Power Project Update

NuScale Small Modular Reactor – The Future of Energy is Here

Fluor Corporation has prepared a webinar outlining how the NuScale reactor, which will power the CFPP, presents a safer, carbon-free, modular, scalable and economical solution for future energy needs. Watch the video HERE.

Project Director Dr. Shawn Hughes reported the following activities to the CFPP Project Management Committee on January 18:

- Field activities at the CFPP site at Idaho National Laboratory commenced in August of 2021 and were completed in January 2022, achieving a major milestone on the project. The field work involved detailed geotechnical surface and subsurface investigations to characterize geologic properties underlying the site, including potential volcanic and seismic hazards. A network of groundwater monitoring wells was also established, along with a meteorological monitoring station.



CFPP site on Jan. 6, 2022. Locations of key bore holes and wells are noted.

"This is an extraordinary accomplishment to complete this critical-path scope safely, in challenging weather conditions, and without schedule impacts," said Dr. Hughes. "The Fluor team and their subcontractors did an exceptional job planning and executing the work."


Shawn Hughes

- In parallel with completion of the CFPP site work, the project is also moving forward with the development of a Combined License Application (COLA) to be submitted to the U.S. Nuclear Regulatory Commission (NRC). Analysis of the data collected from the site, as well as a two-year monitoring campaign, will be presented in the COLA. The COLA will also provide additional detailed facility/system designs and accompanying analyses, which will support the NRC safety and environmental reviews.

- Development of the CFPP COLA is being managed by Fluor Enterprises, Inc., under contract with CFPP, LLC, with support and technical expertise from NuScale Power. NuScale Power is providing the SMR Reactor Technology for the project. COLA completion is scheduled for early 2024. Startup operation of the CFPP is planned for 2029.

- Subscription recruitment continues to go well with advanced discussions ongoing with several utilities outside of UAMPS. Transmission solutions to deliver power to interested utilities are being developed, with transmission service requests filed and exchange opportunities being explored.

- Formal engagement of a plant operator is being negotiated, with a Term Sheet signed outlining agreements to be reached. The plant operator will become a key member of the project team.

- Other work underway includes developing the Class 3 cost estimate, developing topic reports for submission to the NRC, continuing work on the Standard Plant Design, and developing a supply chain pricing analysis. NuScale and Fluor are working on power module manufacturing trials and steam generator fabrication. An area labor market analysis report is in review.

NuScale Facility Tour. In January, UAMPS sponsored a tour of the NuScale's research and development facility in Corvallis, Oregon. Participants included new UAMPS member representatives, city council members and Northwest utilities interested in the project. Attendees learned about the NuScale Power Module, which will power the CFPP, its safety features and ability to follow load. Attendees toured the NuScale Integral System Test (NIST-2) facility the simulated SMR control room, and a one- third scale Power Module test facility. NuScale has spent hundreds of millions of dollars developing its Nuclear Power Module, with support from the U.S. Department of Energy.

NuScale facility tour

Government & Public Affairs Report

By **Mike Squires**, UAMPS Government & Public Affairs Director

Mike Squires

At the federal level, UAMPS is closely monitoring the implementation of the Bipartisan Infrastructure Bill, the progress that is made on President Biden's Build Back Better legislation, and the much-anticipated appropriations process. The 2022 midterm election seems to already be in full gear, and it is anticipated that Republicans have a strong shot at taking control of the House which will only put the 2024 presidential election into greater focus.

In Utah, the 2022 General Session is underway and UAMPS continues to monitor legislative items. In particular, the Governor's Office of Energy Development is updating its Strategic Energy Plan, and UAMPS is working with the Cox- Henderson Administration to ensure that UAMPS' voice is heard.

Legislative Breakfast. UAMPS' annual Legislative Breakfast will be held on February 16. It's a good opportunity to engage with our state legislators and discuss energy issues with them. UAMPS member representatives, mayors, city council members, power board members, etc., are invited. For more information about the Legislative Reception or any other item, contact Mike Squires, mike@uamps.com.

Industry Information & Developments

Newsweek: Tiny Reactors Could Spark a 'Nuclear Revolution' to Fight Climate Change. David H. Freedman, January 12, 2022. The U.S. and 80 other countries agreed in November at the COP26 climate conference to convert most of the world to green energy in a few decades. It's a necessary step to curb greenhouse gases that cause climate change, but it comes with a daunting challenge: how to simultaneously meet a worldwide demand for energy that is expected to rise as fast as the temperatures. . . . Seventy small reactors are currently under development around the world, according to the International Atomic Energy Agency. One that's getting attention comes from NuScale Energy in Portland, Oregon, a spinoff from Oregon State University. NuScale has been plugging away since 2007 on a mini- reactor which, like large conventional reactors, relies on circulating, pressurized water to transfer heat from the reactor core to steam-driven turbines.

Titans of Nuclear: Ep 350: Scott Bailey - Vice President of Supply Chain, NuScale Power. Please note: this is an audio story. 1) Scott Bailey shares how his journey through merchant marines and traditional nuclear brought him to small modular reactors 2) Why simplicity in design and supply chain are some of NuScale's greatest assets 3) A deep dive on NuScale's manufacturing, assembly, and deployment strategies 4) Two key deliverables to get from vendors to mitigate risk in the design for the manufacturing stage.

OfficeofNuclearEnergy:5NuclearEnergyStoriestoWatchin2022 . January 19, 2022. The U.S. nuclear industry posted some big wins in 2021 and that momentum is expected to continue this year with the implementation of the new Bipartisan Infrastructure Law. . . . The U.S. Nuclear Regulatory Commission is expected to issue its final rulemaking in August to certify NuScale Power's small modular reactor design. NuScale is the first U.S. SMR to receive a final safety evaluation report from the NRC and will become the seventh U.S. reactor to be certified. DOE is supporting the construction of the nation's first NuScale SMR power plant at Idaho National Laboratory. The first power module is expected to be operational by 2029.

TheJournalRecord:NuclearPoweranOptionPossibleinMostStates . January 20, 2022. As states are pushed by climate change to dramatically reduce use of fossil fuels, many are concluding that solar, wind and other renewable power sources might not be enough to keep the lights on.

Nuclear power is emerging as an answer to fill the gap as states transition away from coal, oil and natural gas to reduce greenhouse gas emissions and stave off worsening effects of global warming. The renewed interest in nuclear comes as companies, including one started by Microsoft founder Bill Gates, are developing smaller, cheaper reactors that could supplement the power grid in communities across the U.S.

EIN Newswires: Small Modular Reactor Market Growing Rapidly at 15.8% CAGR with Value of $18.8 billion by 2030. January 19, 2022. The global small modular reactor market is projected to reach $18.8 Billion by 2030, growing at a CAGR of 15.8%. Older generation of nuclear power plants are large in size and require huge amount of capital and construction time. Locations far away from large power grid systems find it difficult to install nuclear reactors. Hence, setting a nuclear reactor is not feasible in remote locations, thus paving for development of smaller nuclear reactors. They have smaller footprints and as they are prefabricated in factories, constructing them take less time and cost.

The U.S. accounted for the largest share of the market in 2020 as well is the fastest growing region, owing to presence of well-established SMR manufacturers such as NuScale Power and General Electric.

AWindandSolarElectricGrid?That'saTerribleIdea . BY PETER Z. GROSSMAN, OPINION CONTRIBUTOR. January 12, 2022. Blackouts are unavoidable with solar and wind because the wind can stop blowing strongly, sometimes for weeks, and the sun sets daily and may be blocked by clouds for many days consecutively. Massive storage to date cannot fill in for more than a few hours at anything like an acceptable cost. Blackouts can cost electric customers their lives.

And in just about every case where a large percentage of electricity is generated by solar and wind, the cost of electricity to consumers has risen dramatically, and more and more people struggle to pay their energy bills.

First, as the U.S. has shown, replacing coal-fired generation with natural gas reduces emissions significantly. But the next step is clearly nuclear power, the major electric generating technology that is scalable, independent of the weather and GHG-free. The next generation of nukes is likely to power the future (perhaps along with nuclear fusion), but even the current generation should be considered for development.

CryptoMinersLooktoNuclearPower . January 6, 2022. Cryptocurrency mining is hugely energy intensive, and with the United States now the leading source of Bitcoin production, companies are looking to nuclear plants to power their operations.

The global Bitcoin mining network consumed an estimated 67TWh of electricity in 2020, according to Cambridge university's Bitcoin Electricity Consumption Index (BECI). This has already been surpassed in 2021, with an estimated 89.3TWh of electricity consumed over the first ten months of this year. And as cryptocurrency grows in profitability, gains mainstream acceptance and becomes more widely accepted, this demand is likely to continue.

Giving Nuclear Power a Second Look to Fight Climate Change | The Seattle Times. January 14, 2022. America burns a billion tons of coal annually, which may contribute to the direct and indirect deaths of 100,000 people a year from the pollution. No deaths in the United States or Western Europe have ever resulted from nuclear power and only two directly died in Japan (31 died at Chernobyl because of an inferior reactor design and poor handling of the disaster).

X-energy, plus Bill Gates' Bellevue-based TerraPower and Portland-based NuScale "proposes reactors that can ramp up and down their electrical output much more rapidly than the large reactors now operating. This agility could help keep electrical grids in balance as more wind and solar power comes online."

WestVirginiaSenateSupportsRepealingBanonNuclearPlants. January 26, 2022. Members of the West Virginia Senate were nearly unanimous in their support Tuesday for a bill to repeal the prohibition on nuclear power. The Senate voted 24-7 for Senate Bill 4, repealing sections of the state code banning the construction of nuclear power plants in West Virginia. A similar bill is being considered in the House of Delegates.

[InTinyWyomingTown,BillGatesBetsBigonNuclearPower|APNews](#) . January 18, 2022. In this sleepy Wyoming town that has relied on coal for over a century, a company founded by the man who revolutionized personal computing is launching an ambitious project to counter climate change: A nationwide reboot of nuclear energy technology. . . . in November, a company started by Bill Gates, TerraPower, announced it had chosen Kemmerer for a nontraditional, sodium- cooled nuclear reactor that will bring on workers from a local coal-fired power plant scheduled to close soon.

In Other News . . .

New Executive Committee Officers. UAMPS board members have elected a new Executive Committee. The new officers include:

- Les Williams – Board Chair (Beaver City member representative)
- Rick Hansen – Vice-Chair (Washington City member representative)
- Shane Ward – Secretary (Mt. Pleasant member representative)
- Dwight Day – Treasurer (Oak City member representative)

The new officers are all experienced board members excited to take UAMPS into a productive new year with an emphasis on non-carbon resource development.

If you have questions about UAMPS' plans for a carbon-free future, please email them to jackie@uamps.com.