

SEPTEMBER 2022 ATVG FALL REPORT

TVA Moving Forward With Plans for Smaller Nuclear Reactors

Nearly four decades after the Tennessee Valley Authority abandoned construction of more than half of the nuclear plants it once planned to build, the federal utility is moving forward again with plans to pursue the next generation of nuclear power.

The federal utility said last week it has an agreement with a nuclear manufacturer to pursue a small modular reactor design at the Clinch River reactor site near Oak Ridge and will spend the next year preparing a possible construction permit to build a couple of the 300-megawatt reactors.

TVA President Jeff Lyash said smaller nuclear reactors such as the GE-Hitachi BWRX-300 being studied by TVA can be built more cost effectively and offer more flexibility than the previous generation of nuclear plants. Lyash said while TVA is pursuing a range of energy options for its future, he thinks the small modular reactors will be needed to help TVA achieve its long-term goal of being carbon-free by 2050 while still maintaining reliable and relatively low-cost power.

"I am pleased to announce that TVA has taken another step on that road (to building a small modular reactor) and signed a two-party agreement with GE-Hitachi which will support our planning and preliminary licensing for the potential deployment of an SMR (small modular reactor) at the Clinch River site," Lyash said during an earnings presentation Tuesday. "The agreement will provide additional information to analyze the viability of SMRs in the Valley."

In the quarterly earnings report, TVA revealed that the board of directors this spring ratified approval of a programmatic approach to explore the GE-Hitachi reactor design "in collaboration with other utilities, government agencies, research institutions and organizations on advanced nuclear technologies."

TVA and Ontario Power Co., the biggest public utilities in the United States and Canada, have negotiated a bilateral contract with General Electric and Hitachi to develop and build the GE Hitachi BWRX-300. Lyash said TVA is targeting the fourth quarter of 2023 or the first quarter of 2024 to submit an application for a construction permit for the smaller reactor design, which could be built as soon as 2030.

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TVA's latest move is part of a plan adopted by the board in February allocating up to \$200 million to explore and develop the GE Hitachi BWRX-300 reactor design. The GE Hitachi model is one of more than two dozen small reactor designs under development.

Lyash said the 300-megawatt size and light-water design of the GE Hitachi plan "fits the scale, load growth and decarbonization plans" that the board outlined when it adopted its power plan in 2021.

"The BWRX-300 is an ideal technology solution for TVA as it looks to small modular reactors as a source of carbon-free generation," Sean Sextone, the executive vice president of advanced nuclear at GE-Hitachi Nuclear Energy, said in a statement Tuesday.

Lyash said TVA is pursuing a new and diverse generation portfolio to ensure a reliable and resilient power system, and he is eager to explore and expand solar generation, battery storage, pumped hydro generation, advanced hydrogen technologies and other carbon-free power production.

Last month, TVA announced it is seeking proposals for up to 5,000 megawatts of carbon-free power in one of the biggest such requests for carbon-free generation anywhere in the country.

"But I think to meet the increased demand we expect in electricity, and to do so in a reliable, resilient, cost-effective and clean manner, we need to consider new nuclear generation," Lyash said.

TVA was the first utility to obtain an early site permit to build up to 800 megawatts of nuclear power generation from small modular reactors at its Clinch River site in Oak Ridge. By a 3-1 vote, the U.S. Nuclear Regulatory Commission voted in 2019 to issue TVA a 20-year site permit for the 935-acre site as an acceptable location for TVA to potentially construct and operate small modular reactors.

TVA is pursuing a two-step licensing process to proceed with a construction permit to build the new units and then later obtain an operating permit to run the reactors.

"We're developing that construction permit application, which we would make a decision whether to submit that (to the U.S. Nuclear Regulatory Commission) in the fourth quarter of 2023 or the first quarter of 2024," Lyash said.

The commission would have up to two years to review and decide on the construction permit application. Lyash said the Oak Ridge project should serve as a model for other small



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modular reactors that TVA might also build on former coal power plant sites or the abandoned Bellefonte nuclear plant site in Alabama.

The decision to potentially build any small modular reactor will still require approval by the TVA board and the Nuclear Regulatory Commission.

In its financial report, TVA said it has spent \$98 million on work regarding small modular reactors, including work to complete the early site permit application for the Clinch River Nuclear Site. The U.S. Department of Energy, which operates the Oak Ridge National Laboratory near the Clinch River site, is partnering in some of the research on the project and has reimbursed TVA \$29 million.

"Additional expenditures will be determined based on future project development," TVA said in its financial filing.



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ATVG Fall Meeting

Gatlinburg Downtown Marriott (Eastern Time Zone)

Phone: 865-436-2008

October 25/26, 2022

October 25th

- **6:00 p.m. Early Arrival Dinner at Park Grill** (*with Hospitality Sponsor Sequoyah Group*)

October 26th

- **11:00 a.m. Annual Meeting and 2023 Officer Elections** (*Separate agenda will be provided*)
- **Noon: Lunch at the Marriott**
- **1:00 p.m. ATVG Membership Meeting; Welcome & Greetings** - *Mayor Bill Newman*
ATVG Board President
- **TVA Update, including Board of Director Nominees**
- **Energy System of the Future**
- **Small Modular Reactors (Clinch River Nuclear Site)**
- **Break**
- **TVA Payment in Lieu of Taxes (PILOT)**
- **Broadband Connectivity: Blount County's Success Story**
- **5:15 Reception** (*Sponsored by TRANE*)
- **Dinner (Holston Catering)**

Please help us make necessary arrangements by letting us know if you will be attending. Send the enclosed registration form by email to: registration@atvg.org or by U.S. mail to: ATVG, P.O. Box 3578, Clarksville, TN 37043

Registration Form is on next page



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Association of Tennessee Valley Governments Meeting Registration Form

Registration Fee: \$175.00 for members and affiliates; \$300.00 for non-members

Name:

E-Mail:

Spouse's Name:

Registration Fee for spouse is included/No additional charge

Company/Organization:

Full Address:

Make checks payable to: Association of Tennessee Valley Governments- P.O. Box 3578 – Clarksville, TN 37043



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ATVG is a 501(c) (4), not-for-profit, public interest organization.

ATVG advocates for the interests of county and city/town governments residing within the seven-state TVA region and their partners in the public and private sectors.

For details about ATVG's mission and program of work, visit us on line at: www.atvg.org