



## NEWS RELEASE

### **ORNL and TVA Sign Agreement to Collaborate on Advanced Reactor Technologies**

OAK RIDGE, Tenn. —The U.S. Department of Energy's Oak Ridge National Laboratory and the Tennessee Valley Authority have signed a memorandum of understanding to evaluate a new generation of flexible, cost-effective advanced nuclear reactors.

Under the agreement, ORNL and TVA will collaborate on ways to improve the economic feasibility of potentially licensing, building, operating and maintaining one or more advanced nuclear reactors, such as a small modular reactor, at TVA's 935 acre [Clinch River site](#) in East Tennessee. Such advanced reactors offer the potential of lower-cost carbon-free energy through reduced construction times and greater operational flexibility. TVA has not made a decision to build and would first need approval from the Nuclear Regulatory Commission for a specific design.

The research performed at ORNL through DOE's national programs has enabled multiple utilities to innovate and improve power generation through the development and use of new materials, processes and state-of-the-art technologies.

"We are combining our world-leading research capabilities and TVA's operating expertise to accelerate the next generation of cost-effective nuclear power," ORNL Director Thomas Zacharia said. "Nuclear has long been a key component of the U.S. energy portfolio, and growing demand for emission-free electricity requires that we innovate to ensure safe, affordable and efficient nuclear power for generations to come."

"Nuclear generation plays an important role in providing clean, reliable power at TVA," TVA President & CEO Jeff Lyash said. "This partnership with ORNL supports TVA's mission for innovation and will allow us to better explore potential future nuclear technologies that benefit the 10 million people across seven states and help lead nuclear energy's future in the United States."

The partnership will take advantage of ORNL's scientific expertise and its unique facilities including the High Flux Isotope Reactor, Oak Ridge Leadership Computing Facility and Manufacturing Demonstration Facility.

This new effort builds on decades of collaboration between TVA and ORNL, leveraging nuclear capabilities and assets from both organizations, including a 2016

effort using modeling tools developed at ORNL to predict the first six months of operations of TVA's Watts Bar Unit 2 nuclear power plant. Specific areas of importance that will be evaluated by the participants of the MOU include, but are not limited to:

- Development of advanced construction techniques.
- Evaluation of integrated development activities for site infrastructure support.
- Development of various economic deployment catalysts.
- Innovation of advanced manufacturing technologies.
- Use of technology deployment to meet regulatory and safety requirements more efficiently.

"As a pioneer in nuclear energy and home of the world's first continuously operating reactor, ORNL continues its commitment to innovation in nuclear science and technology," said Alan Icenhour, associate laboratory director for Nuclear Science and Engineering at ORNL. "We look forward to partnering with TVA and the potential for introducing a new nuclear energy era."

UT-Battelle LLC manages ORNL for DOE's Office of Science, the single largest supporter of basic research in the physical sciences in the United States. The Office of Science is working to address some of the most pressing challenges of our time. For more information, please visit <https://energy.gov/science>.

The Tennessee Valley Authority is a corporate agency of the United States that provides electricity for business customers and local power companies serving nearly 10 million people in parts of seven southeastern states. TVA receives no taxpayer funding, deriving virtually all of its revenues from sales of electricity. In addition to operating and investing its revenues in its electric system, TVA provides flood control, navigation and land management for the Tennessee River system, and assists local power companies and state and local governments with economic development and job creation.

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