

Lightbridge Announces Start of Irradiation Testing of its Enriched Uranium-Zirconium Alloy Samples in Advanced Test Reactor at Idaho National Laboratory

RESTON, Va., Nov. 19, 2025 (GLOBE NEWSWIRE) -- Lightbridge Corporation (Nasdaq: LTBR), a leader in advanced nuclear fuel technology, today announced the start of irradiation testing of its enriched uranium-zirconium alloy fuel material samples in the Advanced Test Reactor (ATR) at Idaho National Laboratory (INL). This milestone represents a significant step forward in the Company's fuel development and testing program conducted under its Cooperative Research and Development Agreement (CRADA) with INL.



Image 1: Lightbridge and INL Team Performing a Visual Inspection of a Finished Enriched Uranium-Zirconium Coupon Sample inside a Glovebox







Image 2: Capsules Containing Lightbridge Fuel Material Samples Before Loading into an Experimental Assembly

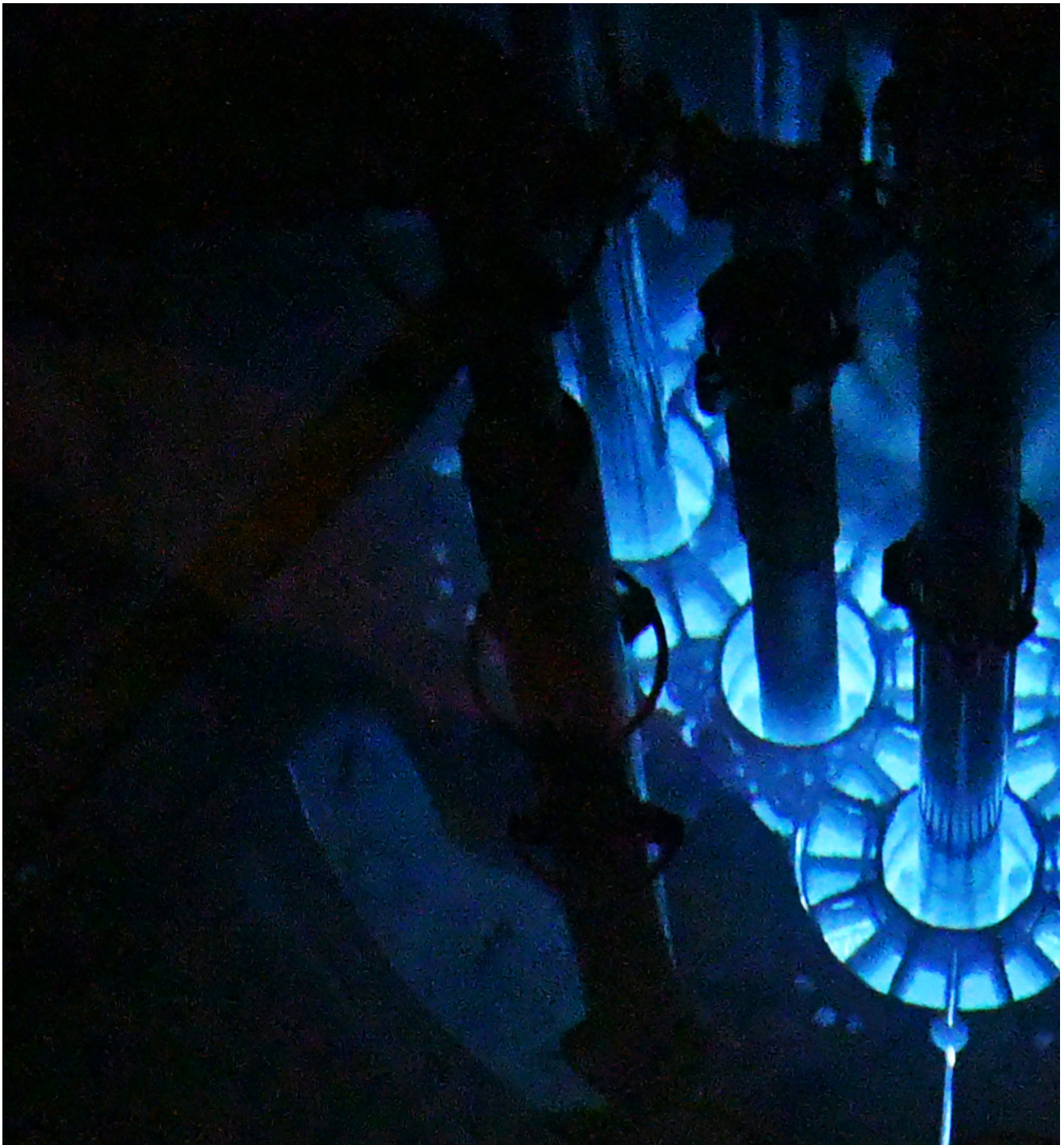


Image 3: The Core of the Advanced Test Reactor

Key highlights of this milestone include:

- **Start of Capsule Irradiation Testing:** Enriched uranium-zirconium alloy fuel material samples have been successfully inserted in the ATR, commencing an irradiation testing campaign designed to collect key material performance data for the Lightbridge fuel design.
- **Progression from Manufacturing to Testing:** The start of irradiation follows the successful fabrication and loading of enriched uranium-zirconium coupon samples into an experiment assembly earlier this year, demonstrating continued progress along Lightbridge's fuel development roadmap.
- **Critical Data Generation:** The irradiation testing campaign is expected to provide essential data on the fuel alloy's microstructural evolution, thermal conductivity properties, and other data as a function of burnup that are critical to the qualification and licensing of Lightbridge Fuel™ for future commercial use.

- **Post-Irradiation Examination:** During the irradiation testing campaign, some irradiated samples will be removed at various burnup levels to undergo post-irradiation examination at INL to assess the fuel alloy's performance, supporting further design qualification for licensing report submissions.

"Commencement of irradiation testing of Lightbridge's enriched uranium-zirconium alloy samples at the ATR represents a major achievement for both INL and Lightbridge," said **Dr. Jess Gehin, Associate Laboratory Director for Nuclear Science & Technology** at INL. "The ATR provides a world-class platform for evaluating advanced nuclear materials under realistic conditions, and we look forward to analyzing the results of this important experiment."

Dr. Scott Holcombe, Vice President of Engineering at Lightbridge, stated, "The start of capsule irradiation testing marks a pivotal step in demonstrating the performance of Lightbridge Fuel™. The data generated in this phase will help us validate some key thermo-mechanical properties of our fuel alloy and how these properties vary with irradiation, moving us closer toward commercial deployment of Lightbridge Fuel in existing and new water-cooled reactors."

About Idaho National Laboratory

Battelle Energy Alliance manages INL for the U.S. Department of Energy's Office of Nuclear Energy. INL is the nation's center for nuclear energy research and development, and also performs research in each of DOE's strategic goal areas: energy, national security, science and the environment. For more information, visit www.inl.gov. Follow us on social media: Facebook, Instagram, LinkedIn and X.

About Lightbridge Corporation

Lightbridge Corporation (NASDAQ: LTBR) is focused on developing advanced nuclear fuel technology essential for delivering abundant, zero-emission, clean energy and providing energy security to the world. The Company is developing Lightbridge Fuel™, a proprietary next-generation nuclear fuel technology for existing light water reactors and pressurized heavy water reactors, significantly enhancing reactor safety, economics, and proliferation resistance. The Company is also developing Lightbridge Fuel for new small modular reactors (SMRs) to bring the same benefits plus load-following with renewables on a zero-carbon electric grid.

Lightbridge has entered into two long-term framework agreements with Battelle Energy Alliance LLC, the United States Department of Energy's operating contractor for Idaho National Laboratory, the United States' lead nuclear energy research and development laboratory. DOE's Gateway for Accelerated Innovation in Nuclear program has twice awarded Lightbridge to support the development of Lightbridge Fuel over the past several years. Lightbridge is participating in two university-led studies through the DOE Nuclear Energy University Program at Massachusetts Institute of Technology and Texas A&M University. An extensive worldwide patent portfolio backs Lightbridge's innovative fuel technology. Lightbridge is included in the Russell Microcap® Index. For more information, please visit www.ltbridge.com.

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Forward Looking Statements

With the exception of historical matters, the matters discussed herein are forward-looking statements. These statements are based on current expectations on the date of this news release and involve a number of risks and uncertainties that may cause actual results to differ significantly from such estimates. The risks include, but are not limited to: Lightbridge's ability to commercialize its nuclear fuel technology; the degree of market adoption of Lightbridge's product and service offerings; Lightbridge's ability to fund general corporate overhead and outside research and development costs; market competition; our ability to attract and retain qualified employees; dependence on strategic partners; demand for fuel for nuclear reactors; Lightbridge's ability to manage its business effectively in a rapidly evolving market; the availability of nuclear test reactors and the risks associated with unexpected changes in Lightbridge's fuel development timeline; the increased costs associated with metallization of Lightbridge's nuclear fuel; public perception of nuclear energy generally; changes in the political environment; risks associated with war in Europe; changes in the laws, rules and regulations governing Lightbridge's business; development and utilization of, and challenges to, Lightbridge's intellectual property; risks associated with potential shareholder activism; potential and contingent liabilities; as well as other factors described in Lightbridge's filings with the Securities and Exchange Commission (the "SEC"). Lightbridge does not assume any obligation to update or revise any such forward-looking statements, whether as the result of new developments or otherwise, except as required by law. Readers are cautioned not to put undue reliance on forward-looking statements.

A further description of risks and uncertainties can be found in Lightbridge's Annual Report on Form 10-K for the fiscal year ended December 31, 2024, and in its other filings with the SEC, including in the sections thereof captioned "Risk Factors" and "Forward-Looking Statements", all of which are available at <http://www.sec.gov> and www.ltbridge.com.

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Photos accompanying this announcement are available at:

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Source: Lightbridge Corporation

Image 1



Lightbridge and INL Team Performing a Visual Inspection of a Finished Enriched Uranium-Zirconium Coupon Sample inside a Glovebox

Image 2



Capsules Containing Lightbridge Fuel Material Samples Before Loading into an Experimental Assembly

Image 3



The Core of the Advanced Test Reactor