

July 28, 2025



Lightbridge Successfully Fabricates Nuclear Material Samples with Enriched Uranium-Zirconium Alloy for Testing in the Advanced Test Reactor

RESTON, Va., July 28, 2025 (GLOBE NEWSWIRE) -- Lightbridge Corporation (Nasdaq: LTBR), a leader in advanced nuclear fuel technology, today announced the successful fabrication of coupon samples using enriched uranium-zirconium alloy, a critical step in the development of its next-generation Lightbridge Fuel™ product. The samples are representative of the fuel material alloy composition Lightbridge plans to use in the commercial fuel product designed to improve the performance and safety of nuclear reactors worldwide.

Key highlights of this achievement include:

- **Successful Extrusion of Enriched Uranium-Zirconium Alloy Samples:** Lightbridge has successfully extruded enriched uranium-zirconium alloy samples that match the fuel material alloy composition intended for its future commercial Lightbridge Fuel™ product.
- **Utilization of Proven Fabrication Process:** The extrusion process was performed using Lightbridge's proprietary fabrication method, previously demonstrated at the Idaho National Laboratory (INL), to extrude and co-extrude depleted uranium samples with zirconium-alloy cladding. This proven technology is now applied to the enriched alloy for further development.
- **Collaboration with INL for Irradiation Testing:** The enriched coupon samples will be placed into capsules and undergo irradiation testing at INL's Advanced Test Reactor (ATR). This work is conducted as part of an existing Cooperative Research and Development Agreement (CRADA) between Lightbridge and the Idaho National Laboratory.
- **Irradiation Testing to Support Regulatory Efforts:** The planned irradiation testing program, along with post-irradiation examination activities (the scope of which will be detailed in a future Project Task Statement), is aimed at generating critical irradiation performance data for Lightbridge's advanced fuel. This data will play a key role in supporting the company's regulatory licensing and commercialization efforts for deployment of Lightbridge Fuel™.



Image 1: Enriched Uranium-Zirconium Rod Post-Extrusion



Image 2: Close-up View of the Enriched Uranium-Zirconium Rod Post-Extrusion, still covered in the extrusion lubricant



Image 3: Taking Measurements of the Enriched Uranium-Zirconium Rod Post-Extrusion



Image 4: View of the Working Space from Above



Image 5: Lightbridge and INL team performing a visual inspection of a finished enriched uranium-zirconium coupon sample inside a glovebox



Image 6: A close-up view of a finished enriched uranium-zirconium coupon sample



Image 7: Taking dimensional measurements of a finished enriched uranium-zirconium coupon sample



Image 8: Finished enriched uranium-zirconium coupon samples after characterization and visual inspection results confirmed their suitability for irradiation testing in the Advanced Test Reactor



Image 9: INL and Lightbridge team inspecting the finished enriched uranium-zirconium coupon samples



Image 10: Taking dimensional measurements of a finished enriched uranium-zirconium coupon sample

"Idaho National Laboratory is proud to collaborate with Lightbridge on this critical step toward

advancing nuclear fuel technology,” said **Ronald Crone, Associate Laboratory Director** at Idaho National Laboratory. “The successful fabrication and upcoming irradiation testing of these enriched uranium-zirconium alloy samples will provide valuable data to support the development of Lightbridge’s advanced nuclear fuel technology.”

“We are thrilled to reach this milestone in the development of our advanced fuel technology,” said **Dr. Scott Holcombe, Vice President of Engineering**, at Lightbridge. “The successful fabrication of these enriched uranium-zirconium alloy coupon samples, to be followed by irradiation testing at INL’s Advanced Test Reactor, is a critical step toward our goal of delivering a safer, more efficient fuel solution for the nuclear energy industry. This collaborative effort with INL will provide essential data to support our regulatory approval process.”

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 2000® Index and the Russell 3000® Index. For more information, please visit www.ltbridge.com.

To receive Lightbridge Corporation updates via e-mail, subscribe at <https://www.ltbridge.com/investors/news-events/email-alerts>

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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