## Lightbridge

## **NEWSLETTER**

Nuclear News and Updates from Lightbridge





# Lightbridge Presents Three Technical Papers on Lightbridge Fuel Technology at American Nuclear Society's TopFuel 2025 Conference

**Read More** 



(From L to R) Raymond Wang, Chris Kirby, Scott Holcombe, Seth Grae, Birol Aktas, Andrey Mushakov, Kyle Paaren

## LIGHTBRIDGE @ TOPFUEL 2025

"The presentation of these papers at TopFuel 2025 reflects our team's dedication to advancing nuclear fuel technology through methodical analysis and experimental validation. By sharing these insights with the global nuclear community, we aim to accelerate the adoption of Lightbridge Fuel™, which offers enhanced safety margins, economic benefits, and proliferation resistance for both existing and future water-cooled large and small modular reactors."

Lightbridge CEO Seth Grae

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

#### **Read More**



Enriched Uranium-Zirconium Rod Post-Extrusion



Close-up View of the
Enriched UraniumZirconium Rod PostExtrusion, still covered in
the extrusion lubricant

#### 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 coextrude 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™.

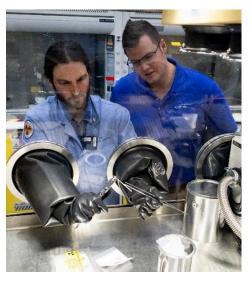
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## Lightbridge Successfully Fabricates Nuclear Material Samples with Enriched Uranium-Zirconium Alloy for Testing in the Advanced Test Reactor

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



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



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



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



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

# LIGHTBRIDGE ADDED TO MORGAN STANLEY NATIONAL SECURITY INDEX



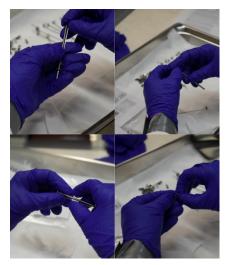
#### Morgan Stanley National Security Index (MSXXNSEC)

Ticker	Name	Weight (%)	Rationale
METC	Ramaco Resources Inc.	4.30	Rare Earth / Strategic Metals
EOSE	Eos Energy Enterprises Inc.	4.30	Energy Infrastructure / Batteries
ALB	Albemarle Corp	4.30	Lithium
UAMY	United States Antimony Corp	4.30	Rare Earth / Strategic Metals
USAR	USA Rare Earth Inc	4.30	Rare Earth / Strategic Metals
NB	NioCorp Developments Ltd	4.30	Rare Earth / Strategic Metals
UUUU	Energy Fuels Inc/Canada	4.30	Uranium / Nuclear / Rare Earth
LEU	Centrus Energy Corp	4.30	Uranium / Nuclear
CCJ	Cameco Corp	4.30	Uranium / Nuclear
<b>BWXT</b>	BWX Technologies Inc	4.30	Uranium / Nuclear
SEI	Solaris Energy Infrastructure	4.23	Energy Infrastructure / Batteries
UEC	Uranium Energy Corp	3.97	Uranium / Nuclear
NNE	NANO Nuclear Energy Inc	3.63	Uranium / Nuclear
TSLA	Tesla Inc	3.33	Manufacturing / Batteries
MIR	Mirion Technologies Inc	3.24	Uranium / Nuclear
CRML	Critical Metals Corp	3.18	Rare Earth / Strategic Metals
<b>AMPX</b>	Amprius Technologies Inc	3.04	Energy Infrastructure / Batteries
NXE	NexGen Energy Ltd	2.71	Uranium / Nuclear
MVST	Microvast Holdings Inc	2.56	Energy Infrastructure / Batteries
MP	MP Materials Corp	2.49	Rare Earth / Strategic Metals
BLDP	Ballard Power Systems Inc	2.39	Energy Infrastructure / Batteries
ABAT	American Battery Technology Co	2.30	Energy Infrastructure / Batteries
OKLO	Oklo Inc	2.20	Uranium / Nuclear
LTBR	Lightbridge Corp	1.61	Uranium / Nuclear
ASPI	ASP Isotopes Inc	1.61	Uranium / Nuclear
SGML	Sigma Lithium Corp	1.61	Lithium
IDR	Idaho Strategic Resources Inc	1.48	Rare Earth / Strategic Metals
IE	Ivanhoe Electric Inc / US	1.32	Rare Earth / Strategic Metals
LAC	Lithium Americas Corp	1.27	Lithium
CRS	Carpenter Technology Corp	1.26	Rare Earth / Strategic Metals
IVN CN	Ivanhoe Mines Ltd	1.26	Rare Earth / Strategic Metals
WPM	Wheaton Precious Metals Corp	1.25	Rare Earth / Strategic Metals
UROY	Uranium Royalty Corp	1.13	Uranium / Nuclear
FM CN	First Quantum Minerals Ltd	1.00	Rare Earth / Strategic Metals
FCX	Freeport-McMoRan Inc	0.99	Rare Earth / Strategic Metals
EU	Encore Energy Corp	0.80	Uranium / Nuclear
SLI	Standard Lithium Ltd	0.70	Lithium
AMRK	A-Mark Precious Metals Inc	0.20	Rare Earth / Strategic Metals
LAR	Lithium Argentina AG	0.20	Lithium

The Morgan Stanley National Security Index is a thematic equity index developed by Morgan Stanley to track publicly listed companies whose operations, products or technologies contribute to national security, supply chain resilience and strategic infrastructure. The index includes leading US-listed firms engaged in several activities connected to technologies across industries such as defense, battery materials, cybersecurity, energy (including nuclear) reflecting the importance of these industrial complexes.

Lightbridge Completes Loading of Capsules
Containing Lightbridge Fuel Material Samples into
an Experiment Assembly for Irradiation Testing in
the Advanced Test Reactor

**Read More** 



Loading fuel into rodlet holders





Loading fuel into the inner capsule

#### Key highlights of this achievement include:

Completion of Loading of Capsules into an Experiment Assembly: Lightbridge and INL teams successfully completed the loading of capsules into an experiment assembly containing enriched uranium-zirconium alloy samples of Lightbridge fuel material produced at INL's Materials and Fuels Complex.

Precision Manufacturing & Assembly Process: The enriched uranium-zirconium alloy coupon samples, matching the composition intended for Lightbridge's future commercial Lightbridge Fuel™ product, were meticulously manufactured and loaded into capsules under stringent quality control and process validation protocols.

**Upcoming Irradiation Testing in ATR**: The experiment assembly will be placed into a designated core position and subjected to irradiation testing at ATR in accordance with the existing Cooperative Research and Development Agreement (CRADA) between Lightbridge and INL.

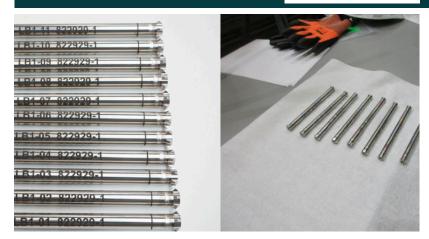
#### **Supporting Regulatory & Commercialization Efforts:**

The planned irradiation testing program, combined with post-irradiation examination activities to be outlined in a forthcoming Project Task Statement, will yield critical performance data needed to inform Lightbridge's planned regulatory licensing activities and advance its commercial deployment efforts.

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## Lightbridge Completes Loading of Capsules Containing Lightbridge Fuel Material Samples into an Experiment Assembly for Irradiation Testing in the Advanced Test Reactor

#### **Read More**



Capsules containing Lightbridge Fuel material samples before loading into an experimental assembly.



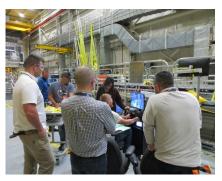
Members of the Lightbridge and INL teams are observing the capsule loading into an experimental assembly.



One of the capsules is being handed to the operator for loading into an experimental assembly.



Loading of one of the capsules into an experimental assembly in the ATR canal.



Observing the loading of the capsules via the video monitoring system.

"We are proud to collaborate with Lightbridge on the assembly of this irradiation experiment," said **Jess Gehin, Associate Laboratory Director for Nuclear Science & Technology at Idaho National Laboratory**. "This is an important step in testing and validating the performance of Lightbridge's advanced fuel in a test reactor environment."

"We are pleased to complete this final step in preparation of the experiment assembly for irradiation testing," said **Dr. Scott Holcombe, Vice President of Engineering, at Lightbridge**. "This is a pivotal milestone for Lightbridge Fuel development. This achievement brings us closer to obtaining the rigorous irradiation testing data required for regulatory approval and eventual commercialization of Lightbridge Fuel."



#### July 29, 2025 - Lightbridge Fabricates Enriched Uranium Advanced Fuel Sample

Lightbridge Corporation has fabricated coupon samples using enriched uranium-zirconium alloy representative of the fuel material alloy composition it plans to use in its commercial next-generation fuel.

## **Nuclear**Newswire

## August 1, 2025 - Lightbridge to Test Uranium-Zirconium Fuel Alloy in INL's ATR

Lightbridge Corporation has fabricated samples of nuclear fuel materials made of an enriched uranium-zirconium alloy, matching the composition of the alloy that the company intends to use for its future commercial Lightbridge Fuel product.



#### August 1, 2025 - Lightbridge Advances Next-Gen Fuel

US nuclear fuel technology company Lightbridge Corporation has fabricated coupon samples using enriched uranium-zirconium alloy, a key step in the development of its next-generation Lightbridge Fuel.



## August 6, 2025 - The Nuclear Power Dealmaking Boom Is Real

"I think every company has their stories about how things are changing," said Seth Grae, CEO of Lightbridge. Things have moved a lot faster, Grae said, since Trump released a series of executive orders aimed at accelerating nuclear energy deployment. "Just since May, we've received this highly enriched uranium [from the Department of Energy], made these fuel samples, got them qualified already at Idaho National Lab. We expect they'll be in the reactor this year. Grae told me. "Things didn't used to happen that fast in nuclear."



## August 7, 2025 - Power-Hungry Al Is Causing Unprecedented Electricity Demand Growth, by Seth Grae

Power-hungry AI, if not fueled by nuclear power, has the potential to stress the electric grid and increase electricity prices for consumers.



## August 20, 2025 - Nuclear Energy: The Only Green Technology That Can Meet the World's Growing Energy Needs, by Seth Grae

Nuclear energy is green and, in fact, is the only green technology that, right now, can meet the world's energy needs.



## October 11, 2025 - US firm Advances Next-Gen Nuclear Fuel, Prepares to Begin Critical Reactor Testing

US-based Lightbridge Corporation has announced that its advanced fuel samples are now fully contained within an experiment assembly, ready for a critical phase of testing.



October 14, 2025 - Lightbridge Fuel Prepared for Testing

The tests, part of a Cooperative Research & Development Agreement with INL, will generate data to support regulatory licensing and commercialisation of Lightbridge fuel.



Creates expedited pathway to approve reactors tested by DoD and DOE. Establishes NRC deadline to license within 18 months



#### Ramp Up Fuel Production 06

Builds out U.S. nuclear fuel supply chain. Increases enrichment and deconv services. Releases 20 metric tons of HALEU.

#### 02 Add 300 GW by 2050

Expands capacity to 400 GW by 2050, including 5 GW of uprates. Uses LPO for reactor restarts, & 10 new large-scale reactor builds.



## 9 Key Takeaways



#### Bolster U.S. Workforce 07

Increases apprenticeship and education opportunities. Increases access to R&D infrastructure.

#### **03** Faster Reactor Testing

Launches new DOE pilot program to build and test three reactors by July 4, 2026.



## from Executive Orders



#### Spent Fuel Management 08

Recommends national policy on spent fuel management and high-level waste that considers advanced fuel cycle

#### **04** Deploy for AI & Military

Directs DoD to build a reactor at a military installation within 3 years. Allows DOE to utilize authorities to authorize reactors for Al applications.







#### Expand U.S. Exports 09

oduces strategy to increase financing for U.S. projects and promote nuclear trade.

#### **05** Explore Recycling

Instructs DOE to find ways to transfer commercial spent fuel to reprocessing and recycling facilities.



U.S. DEPARTMENT of ENERGY Office of Nuclear Energy

On May 23, 2025, President Trump signed four executive orders representing the most significant policy shift toward nuclear energy in decades. These executive orders include provisions that we believe align closely with Lightbridge's technology capabilities and position as an American nuclear fuel technology company.

These orders align with Lightbridge's capabilities, particularly through the "Reinvigorating the Nuclear Industrial Base" directive, which prioritizes power uprates for existing reactors. Lightbridge Fuel™ is positioned to enable uprates of up to 17%, contributing to the goal of adding five gigawatts of capacity by 2030, while offering cost-effective and safety-enhancing solutions for utilities.

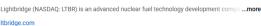
The orders also open avenues in national security, including the potential for expedited reactor construction on military bases and reliable power for critical infrastructure. Lightbridge Fuel's enhanced safety and performance make it suitable for applications in artificial intelligence dominance and uninterruptible power supplies, potentially expanding markets to data centers.

Additional provisions support nuclear fuel efficiency through recycling and reprocessing, including plutonium disposition, and establish funding mechanisms via the Department of Energy's Loan Programs Office, procurement guarantees, and support for mature technologies. Overall, the Executive Orders, combined with bipartisan congressional backing, foster a supportive political landscape for Lightbridge's accelerated development and deployment objectives.





### **Lightbridge Corporation**



Lightbridge

Videos Shorts Playlists



#### **Interview on the Schwab Network** October 7, 2025

Lightbridge CEO Seth Grae interviewed on the Schwab Network on October 7, 2025, providing an update on Lightbridge Fuel amid surging demand for reliable, clean energy.



**Clip Featuring Deputy Assistant** Secretary of Energy Aleshia Duncan outside of the Atlantic Council Nuclear Energy Policy Summit 2025 in New York



#### **Panel Discussion - Atlantic Council Nuclear Energy Summit 2025**

Join industry leaders at the Atlantic Council Nuclear Energy Policy Summit 2025 for an essential discussion on "Building Reactors, Fuel, and the Workforce," addressing the critical infrastructure and human capital challenges facing the unprecedented growth of nuclear energy.



#### **Interview on the Schwab Network** July 22, 2025

Seth Grae, President and CEO of Lightbridge, was interviewed on Market on Close on the Schwab Network. The discussion focused on the increasing demand for nuclear power driven by AI data centers and other applications, highlighting Lightbridge's nuclear fuel technology.



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@ANS\_org #NuclearEnergy



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### Lightbridge Corp 🤣

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Lightbridge is a leading developer of next generation nuclear fuel technology and provider of nuclear energy consulting services worldwide.

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Tripling of nuclear capacity is achievable, says World Nuclear Association

From world-nuclear-news.org



Nuclear power plants will receive the bulk of the money from the Energy Department's loan office, @SecretaryWright said.

#### #NuclearPower @GovNuclear @ANS org





The New York Power Authority is releasing its first solicitations for plans

New York signs up for more nuclear

to develop #advancednuclear reactors in the state's upstate communities in addition to plans for a large reactor or several SMRs.





Google and NextEra to revive major Iowa nuclear facility as AI energy demand surges

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@nexteraenergy #NuclearEnergy #NuclearPower



Ø Lightbridge Corp 📀 @LightbridgeCorp US Signs \$80 Billion Pact to Boost Nuclear Power in Al Drive @WECNuclear @cameconews @rachelmorison #NuclearPower Westinghouse



"The military is planning to go big on #nuclearenergy — by going small. The only problem with this excellent idea is that it can't come fast enough," according to this @washingtonpost editorial.











A must-read analysis from @wef #nuclearenergy



weforum.org

Nuclear energy: How the world can triple capacity by 2050 Nuclear energy is gaining global momentum as a key climate, energy security, and growth solution; yet financin...





## Social Media Roundup



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US to See \$350 Billion Nuclear Energy Boom to Power AI, Report Says





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Nuclear energy represents a \$10 trillion potential market opportunity that could hold "the answer to the world's power shortages," according to a new report from Bank of America.

@BofA News #NuclearEnergy



Lightbridge Corp 🤣 @LightbridgeCorp

CEO Seth Grae and @SamaBilbao y Leon of @WorldNuclear at the WNA Symposium #EnergizingTheFutureNow

#nuclearsympo wna-symposium.org





"[A] convergence of generational technological breakthroughs, intensifying geopolitical competition, and the need for clean, dense, reliable power are positioning #nuclearenergy for a renaissance," according to a new @GoldmanSachs article.



goldmansachs.com

The New Nuclear Age: Why the World Is Rethinking Atomic... After decades of underinvestment, a convergence of generational technological breakthroughs, intensifying ...





From nytimes.com



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Investment bank @MorganStanley predicts that investments in the nuclear value chain could reach \$2.2 trillion in the next 25 years.

#### #NuclearEnergy #NuclearFuel





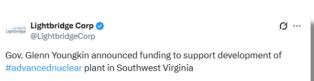
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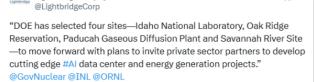


@VirginiaNuclear #NuclearEnergy









From world-nuclear-news.org

Lightbridge Corp 📀





## Social Media Roundup



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"Fundamentally, we need more clean power that's reliable and predicable," said @KatyHuff, a former assistant secretary for #nuclearenergy

#### @USATODAY





"A strong U.S. nuclear program will produce more than megawatts. It will catalyze life-changing technologies, a robust national industrial base and a brighter future for generations," writes Craig Albert, President and COO of @Bechtel in @thehill



Lightbridge Corp @LightbridgeCorp

DOE announces new consortium to strengthen nuclear fuel supply chain



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"This joint effort reflects a shared vision for a modern nuclear fuel cycle -one that supports both existing and advanced reactors and strengthens America's energy resilience," said CEO Seth Grae

#### @oklo \$LTBR #NuclearFuel

Learn more: ltbridge.com/news-media/pre...





Trump administration to make Cold War plutonium available for #nuclearfuel

A variant of Lightbridge Fuel has proven effective in studies to produce #cleanenergy and eliminate plutonium





DOE to Distribute Next Round of #HALEU to U.S. Nuclear Industry

#### @GovNuclear #NuclearFuel



From energy.gov

### **ABOUT LIGHTBRIDGE**

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 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 <a href="https://www.ltbridge.com/investors/news-events/email-alerts">https://www.ltbridge.com/investors/news-events/email-alerts</a>

Lightbridge is on Twitter. Sign up to follow <u>@LightbridgeCorp</u> at <u>http://twitter.com/lightbridgecorp</u>.

For an introductory video on Lightbridge, please visit www.ltbridge.com or click here to watch the video.

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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.

