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Mirion Technologies Awarded Strategic Design Contract for X-energy's Small Modular Reactor

Agreement Focused on Unique Burn Up Measurement System (BUMS) in Development of the Xe-100 High-Temperature Gas-Cooled Reactor

ATLANTA--(BUSINESS WIRE)-- Mirion Technologies (NYSE: MIR), a leading provider of advanced radiation safety solutions, today announced a strategic design contract with X-Energy Reactor Company, LLC ("X-energy"), a leading developer of advanced small modular nuclear reactors and fuel technology for clean energy generation. Per the agreement, Mirion will provide detailed design support for the Burn Up Measurement System (BUMS), a vital system for the fuel cycle of the Xe-100 high-temperature gas-cooled reactor (HTGR). This partnership aligns with Mirion's commitment to the global pursuit of sustainable, low-carbon energy solutions and to empowering innovation that improves the human condition.

What is the BUMS?

The Xe-100 Burn Up Measurement System (BUMS) is an important element of the online reactor's fuel handling system that supports X-energy's groundbreaking technology. Composed of high-purity Germanium (HPGe) detectors to ensure the highest degree of accuracy, the BUMS is designed to maximize nuclear fuel utilization, making the system more productive while minimizing waste.

The system uniquely measures key gamma indicators to determine the level of burn-up, the initial enrichment of the fuel, and the plutonium/uranium (Pu/U) content in each fuel pebble being circulated through the reactor.

"The BUMS is a critical subsystem of our reactors that both ensures we meet our fuel efficiency projections while at the same time safely and reliably operating. Mirion has an exceptional record of developing nuclear instrumentation to accurately and consistently perform in a range of environments. Together, we expect to begin testing the BUMS prototype in 2024 and build the first operational units starting in 2025."

Next Steps

X-energy and Mirion are in the process of developing a BUMS system with a Mirion HPGe detector. To support the defense and in-depth strategy of the Xe-100 and fuel handling system, the BUMS will require a qualification process to show that it can operate under the conditions and circumstances that are required.

Testing using the advanced test reactor will take place at Idaho National Laboratory.

Partnering for Clean Energy

In 2021, X-energy was awarded \$1.2 billion in federal cost-shared funding from the U.S. Department of Energy's Advanced Reactor Demonstration Program to develop, license, build and demonstrate an operational advanced reactor and fuel fabrication facility by the end of the decade. Mirion, whose radiation safety and measurement solutions are already widely used in nuclear power facilities around the world, has been actively involved in discussions with SMR developers and suppliers over the last year.

"We are excited to work with X-energy on next-generation reactor technology that could help make affordable, efficient, and carbon-free energy a viable alternative to fossil fuels," said Thomas Logan, Mirion's Chief Executive Officer. "Our extensive knowledge of ionizing radiation and nuclear power makes us uniquely equipped to support this next wave of critical innovation."

View Mirion products and solutions at mirion.com/smr.

About Mirion

Mirion (NYSE: MIR) is a global leader in radiation safety, science and medicine, empowering innovations that deliver vital protection while harnessing the transformative potential of ionizing radiation across a diversity of end markets. The Mirion Technologies group provides proven radiation safety technologies that operate with precision – for essential work within R&D labs, critical nuclear facilities, and on the front lines. The Mirion Medical group solutions help enhance the delivery and ensure safety in healthcare, powering the fields of Nuclear Medicine, Radiation Therapy QA, Occupational Dosimetry, and Diagnostic Imaging. Headquartered in Atlanta (GA – USA), Mirion employs approximately 2,700 people and operates in 12 countries. Learn more at mirion.com.

About X-Energy Reactor Company, LLC

X-Energy Reactor Company, LLC, is a leading developer of advanced small modular nuclear reactors and fuel technology for clean energy generation that is redefining the nuclear energy industry through its development of safer and more efficient reactors and proprietary fuel to deliver reliable, zero-carbon and affordable energy to people around the world. X-energy's simplified, modular, and intrinsically safe SMR design expands applications and markets for deployment of nuclear technology and drives enhanced safety, lower cost and faster construction timelines when compared with conventional nuclear. For more information, visit [X-energy.com](https://x-energy.com) or connect with us on [Twitter](https://twitter.com/xenergy) or [LinkedIn](https://www.linkedin.com/company/x-energy).

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