NANO Nuclear Energy to Support Advanced Engineering Solutions and City University of New York on DOE SBIR Phase I Project Application for Microreactor Cooling and Smart Monitoring Technologies

March 3, 2025

Project Would Investigate Advanced Decay Heat Removal Methods and a Smart Alarming System for Microreactor Transportation

New York, N.Y., March 03, 2025 (GLOBE NEWSWIRE) -- NANO Nuclear Energy Inc. (NASDAQ: NNE) ("NANO Nuclear" or "the Company"), a leading advanced nuclear energy and technology company focused on developing clean energy solutions, today announced its support of a U.S. Department of Energy (DOE) Small Business Innovation Research (SBIR) Phase I application for a project in collaboration with the City University of New York – City College (CCNY) and Advanced Engineering Solutions LLC of Jersey City, New Jersey (AES). AES is headed by Dinesh Kalaga, Ph.D., a chemical engineer with experience on DOE funded projects, who would serve as the principal investigator of the project.

The project, titled "Investigation of Microreactor Cooling and Development of a Smart Alarming System for Reactor Pressure Vessel Surface Temperature Monitoring," is part of DOE's Funding Opportunity Announcement and aims to develop advanced cooling techniques and monitoring systems for microreactor transport safety.

Assuming SBIR Phase I approval and funding, the project will evaluate advanced Heat Pipes (HPs), Thermoelectric Cooling Modules, and Smart Alarming Systems as innovative solutions for managing decay heat during nuclear microreactor transportation. These technologies have the potential to evolve into a Type B-certified transport container with an integrated cooling system, ensuring the safe and efficient transportation of nuclear microreactors (including NANO Nuclear's **ZEUS** microreactor in development) in compliance with U.S. Department of Transportation (DOT) regulations.

Figure 1 – NANO Nuclear Energy Inc. supports City University of New York and Advanced Engineering Solutions on for Microreactor Cooling and Smart Monitoring Technologies Supports For DOE SBIR Phase I Project

"Our support of AES and CCNY represents an important step forward in addressing one of the most significant challenges facing microreactor deployment—the safe and efficient removal of decay heat during transport,"**said James Walker, Chief Executive Officer and Head of Reactor Development of NANO Nuclear Energy.** "By leveraging advanced heat pipe technologies and smart monitoring systems, we aim to develop a first-of-its-kind transport system that will significantly enhance microreactor safety and regulatory compliance. As the microreactor industry continues to grow, solving transportation challenges is crucial to ensuring ultimate widespread deployment. NANO Nuclear's involvement in this potential DOE-funded initiative reflects our dedication to advancing safe, efficient, and scalable microreactor technologies."

If funding from DOE is approved, the SBIR Phase I project will focus on:

- Developing a Thermal Management System for microreactor transport containers using advanced Heat Pipes (HPs) and Thermoelectric Cooling Modules to remove decay heat passively and actively.
- Creating a Smart Alarming System utilizing real-time monitoring sensors and computer vision technology to detect anomalies in temperature and pressure, enabling operators to take immediate corrective action.
- Designing and testing a scaled-down prototype system at CCNY's Thermal-Hydraulics Laboratory to validate performance and regulatory compliance.

"This project aligns perfectly with our mission to pioneer the next generation of nuclear energy solutions, including those related to reactor transportation," **said Jay Yu, Founder and Chairman of NANO Nuclear Energy.** "A robust and regulatory-compliant transport system is essential for unlocking the full potential of microreactors. By working with AES and CCNY, we are taking proactive steps to ensure microreactors can be safely delivered to locations where they are needed most."

Microreactors are represent the cutting edge of innovation in nuclear energy, designed to provide clean, resilient power in remote locations, military bases, disaster relief operations, data centers and other industrial applications. However, once shut down, microreactors continue to generate decay heat, necessitating an advanced cooling system to prevent overheating during transport. By advancing the thermal management and monitoring technologies needed for microreactor transportation, the project will contribute to overcoming key deployment barriers, helping to accelerate the commercialization of microreactors. The successful completion of Phase I will pave the way for a Phase II expansion, where NANO Nuclear may actively collaborate with AES and CCNY in further development, including a full-scale prototype and real-world testing.

"This collaboration with NANO Nuclear, CCNY and AES brings together leading research and industry expertise to tackle one of the most pressing issues in microreactor deployment," **said Dr. Carlos O. Maidana, Ph.D., NANO Nuclear's Head of Thermal Hydraulics and Space Program.** "Our approach integrates passive and active cooling technologies, ensuring that microreactors meet strict transportation safety requirements while maintaining operational reliability."

NANO Nuclear Energy's suite of energy systems includes several next-generation microreactors in development. To support these technologies, NANO Nuclear is also leading efforts in domestic HALEU (High-Assay Low-Enriched Uranium) fuel development through its subsidiary, HALEU Energy Fuel Inc., ensuring a secure and sustainable fuel supply for microreactors. NANO Nuclear will continue to engage with government agencies, national laboratories, and industry leaders to drive innovation in nuclear energy solutions and is committed to developing innovative reactor technologies and infrastructure that support the necessary transition to clean nuclear energy solutions.

About NANO Nuclear Energy, Inc.

NANO Nuclear Energy Inc. (NASDAQ: NNE) is an advanced technology-driven nuclear energy company seeking to become a commercially focused, diversified, and vertically integrated company across five business lines: (i) cutting edge portable and other microreactor technologies, (ii) nuclear fuel fabrication, (iii) nuclear fuel transportation, (iv) nuclear applications for space and (v) nuclear industry consulting services. NANO Nuclear believes it is the first portable nuclear microreactor company to be listed publicly in the U.S.

Led by a world-class nuclear engineering team, NANO Nuclear's reactor products in development include **"ZEUS", a solid core battery reactor,** and **"ODIN", a low-pressure coolant reactor**, each representing advanced developments in clean energy solutions that are portable, on-demand capable, advanced nuclear microreactors. NANO Nuclear is also developing patented stationary **KRONOS MMR ™ Energy System** and space focused, portable **LOKI MMR ™**.

Advanced Fuel Transportation Inc. (AFT), a NANO Nuclear subsidiary, is led by former executives from the largest transportation company in the world aiming to build a North American transportation company that will provide commercial quantities of HALEU fuel to small modular reactors, microreactor companies, national laboratories, military, and DOE programs. Through NANO Nuclear, AFT is the exclusive licensee of a patented high-capacity HALEU fuel transportation basket developed by three major U.S. national nuclear laboratories and funded by the Department of Energy. Assuming development and commercialization, AFT is expected to form part of the only vertically integrated nuclear fuel business of its kind in North America.

HALEU Energy Fuel Inc. (HEF), a NANO Nuclear subsidiary, is focusing on the future development of a domestic source for a High-Assay, Low-Enriched Uranium (HALEU) fuel fabrication pipeline for NANO Nuclear's own microreactors as well as the broader advanced nuclear reactor industry.

NANO Nuclear Space Inc. (NNS), a NANO Nuclear subsidiary, is exploring the potential commercial applications of NANO Nuclear's developing micronuclear reactor technology in space. NNS is focusing on applications such as the **LOKI MMR ™** system and other power systems for extraterrestrial projects and human sustaining environments, and potentially propulsion technology for long haul space missions. NNS' initial focus will be on cis-lunar applications, referring to uses in the space region extending from Earth to the area surrounding the Moon's surface.

For more corporate information please visit: https://NanoNuclearEnergy.com/

For further NANO Nuclear information, please contact:

Email: IR@NANONuclearEnergy.com
Business Tel: (212) 634-9206

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Cautionary Note Regarding Forward Looking Statements

This news release and statements of NANO Nuclear's management in connection with this news release contain or may contain "forward-looking statements" within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, and the Private Securities Litigation Reform Act of 1995. In this context, forward-looking statements mean statements related to future events, which may impact our expected future business and financial performance, and often contain words such as "expects", "anticipates", "intends", "plans", "believes", "potential", "will", "should", "could", "would" or "may" and other words of similar meaning. In this press release, forward-looking statements include those related to the SBIR application addressed herein and the anticipated benefits to NANO Nuclear of the research project described herein. These and other forward-looking statements are based on information available to us as of the date of this news release and represent management's current views and assumptions. Forward-looking statements are not guarantees of future performance, events or results and involve significant known and unknown risks, uncertainties and other factors, which may be beyond our control. For NANO Nuclear, particular risks and uncertainties that could cause our actual future results to differ materially from those expressed in our forward-looking statements include but are not limited to the following: (i) risks related to our U.S. Department of Energy ("DOE") or related state or non- U.S. nuclear fuel licensing submissions, (ii) risks related the development of new or advanced technology and the acquisition of complimentary technology or businesses, including difficulties with design and testing, cost overruns, regulatory delays, integration issues and the development of competitive technology, (iii) our ability to obtain contracts and funding to be able to continue operations or fund research (including SBIR applications and other government funding, which might not receive DOE approval), (iv) risks related to uncertainty regarding our ability to technologically develop and commercially deploy a competitive advanced nuclear reactor or other technology in the timelines

we anticipate, if ever, (v) risks related to the impact of U.S. and non-U.S. government regulation, policies and licensing requirements, including by the DOE and the U.S. Nuclear Regulatory Commission, including those associated with the recently enacted ADVANCE Act, and (vi) similar risks and uncertainties associated with the operating an early stage business a highly regulated and rapidly evolving industry. Readers are cautioned not to place undue reliance on these forward-looking statements, which apply only as of the date of this news release. These factors may not constitute all factors that could cause actual results to differ from those discussed in any forward-looking statement, and NANO Nuclear therefore encourages investors to review other factors that may affect future results in its filings with the SEC, which are available for review at www.sec.gov and at https://ir.nanonuclearenergy.com/financial-information/sec-filings. Accordingly, forward-looking statements should not be relied upon as a predictor of actual results. We do not undertake to update our forward-looking statements to reflect events or circumstances that may arise after the date of this news release, except as required by law.

Attachment

- NANO Nuclear Energy Inc.



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Source: NANO Nuclear Energy Inc.