



FOR IMMEDIATE RELEASE

Ultra Safe Nuclear Seeks to Deploy Next Generation Micro Modular Reactors in Idaho and Illinois by 2026

*University of Illinois and Idaho National Laboratory Join Proposal to Host Ultra Safe Nuclear Micro Reactors
under the Department of Energy's Advanced Reactor Demonstration Program (ARDP)*

SEATTLE – October 12, 2020. Ultra Safe Nuclear Corporation (USNC) is proposing to partner with Idaho National Laboratory (INL), the University of Illinois at Urbana-Champaign (UIUC) and U.S. Industry to deploy Ultra Safe Nuclear Micro Modular Reactors (MMR™) in the U.S. for the purpose of demonstrating secure power, heat, and experimental capabilities leading to deployment and global export of USNC's advanced U.S. nuclear energy technology. The USNC-led team seeks to demonstrate integrated energy systems (IES) with renewables and other clean energy technologies at INL, and to provide training and experimental capabilities and heat to UIUC.

- The University of Illinois plans to demonstrate a single MMR operated as a Training, Research and Test Reactor, and to partially re-power the coal-fired Abbott power station by providing carbon-free district heating and power to the UIUC campus. The University plans to develop the first generation of commercial micro-reactor operators and will be directly involved in MMR design and integration.
- Ultra Safe Nuclear also proposes placing a micro-reactor power plant (MMR Energy System) at the Idaho National Laboratory to support the demonstration of INL's Integrated Energy Systems (IES), including the optimized carbon-free production of hydrogen by thermo-chemical processes and other zero-carbon energy applications well suited to the high temperature output of the MMR.

The deployment of the MMR in the United States will be supported by a first-generation USNC MMR demonstration at the Canadian Nuclear Laboratories at Chalk River, that will be the first micro reactor to be licensed in Canada. The regulatory review of USNC's next-generation ARDP proposed project will benefit from the Canadian project, as design verification and licensing work with the Canadian Nuclear Safety Commission (CNSC) will be shared with the U.S. Nuclear Regulatory Commission (NRC), as facilitated through a Memorandum of Cooperation signed between the chairs of the NRC and CNSC in 2019.

Demonstration of USNC's MMR technology in the United States will bring a new level of affordability and reliability to clean power generation, where smaller nuclear plants can be deployed for tens of millions, not billions of dollars. Costs of micro nuclear technology, like renewable energy, are expected to drop rapidly as manufacturing techniques advance and smaller and safer nuclear reactors gain wider acceptance.

USNC has launched this initiative fully with private investment which recognizes: 1) Improvements in the fuel design and efficiencies of the MMR, shared across multiple USNC platforms including space and terrestrial power; 2) Simplicity of operations afforded by the heat storage approach; 3) Low cost and rapid deployment schedule; 4) Scalability and output Flexibility to match load demands; and 5) U.S. Government and Regulators willingness to recognize regulatory and licensing differences of very small reactors such as the MMR. With our commitment to never compromise on safety, USNC's proposal is fully funded to meet the cost-share requirements of the ARDP opportunity.

“Our breakthrough technology, grounded in decades of work at places like INL and the University of Illinois, and our commercial strategy, based on private investments in multiple projects, will make the MMR solution affordable and widely available. Our rapid prototyping will allow the development of the next-generation MMR in the U.S. with its manufacturing eco-system already in place in 2026,” said Francesco Venneri, USNC’s CEO. “We are pleased to participate in the ARDP opportunity with a complete micro reactor solution that achieves Congress’ goals of commercial nuclear power in 5-7 years, leading to deployment of carbon-free, American-manufactured energy assets throughout the world in the very near term.”

“We look forward to being the first university to demonstrate this micro modular reactor and the contributions it can make in nuclear power research and in other areas like advanced materials and the hydrogen economy – all of which are crucial to a clean energy future,” said Chancellor Robert J. Jones of the University of Illinois Urbana-Champaign. “This technology is set to help our campus meet its carbon-neutrality goals and drive great, world-changing discoveries. It would be an incredible win for our research enterprise and our campus sustainability efforts.”

“INL is excited about the prospect of demonstrating the first advanced high-temperature gas-cooled reactor in Idaho, where we have successfully demonstrated 52 reactors over the past seven decades,” said Dr. Corey McDaniel, INL’s director of Industry Engagement.

“INL is particularly interested in proposals to demonstrate clean integrated energy systems by pairing nuclear power with renewable technologies to decarbonize the electricity sector,” said Dr. John Wagner, INL’s associate lab director for Nuclear Science & Technology.

About the MMR™ Energy System

The MMR Energy System (MMR ES) is a zero-carbon nuclear power plant, integrating one or several standardized micro reactors (MMRs) with a heat storage unit and the adjacent plant for power conversion and utilization. Electrical power or process heat (or a mix of both) is produced in the MMR ES, depending on configuration. The MMR is a small high-temperature gas-cooled reactor generating 15 or 30 MW (thermal). The MMR uses USNC’s proprietary, meltdown-proof FCM™ TRISO fuel (co-developed with INL and Oak Ridge National Laboratory). Nuclear heat is transferred from the micro reactors to a molten salt energy storage unit that decouples the nuclear system from the power conversion system, greatly simplifying operations and allowing easy load matching and flexible use of the energy generated. No water is required for cooling. The MMR Energy System can be used as a standalone power plant or as part of microgrids that include intermittent renewables such as solar or wind, or to provide carbon-free, high-quality process heat for co-located industrial applications or for high-efficiency hydrogen production.

About Ultra Safe Nuclear Corporation

Ultra Safe Nuclear is the Seattle-based global leader in the deployment of micro reactors, and a strong vertical integrator of nuclear power technologies, entirely committed to bringing safe, commercially competitive, clean and reliable nuclear energy to markets throughout the world. The company adheres to strict inherent and intrinsic safety principles through technological innovation in fuels, materials and design practices. Safe, Simple, Secure: USNC is Reliable Energy, Anywhere.

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