



Framatome and Ultra Safe Nuclear to Form a Joint Venture to Manufacture TRISO and FCM Fuel

January 26, 2023 – Framatome and Ultra Safe Nuclear Corporation (USNC) intend to form a joint venture to manufacture commercial quantities of Tri-structural Isotropic (TRISO) particles and Ultra Safe Nuclear’s proprietary Fully Ceramic Micro-encapsulated (FCM®) fuel.

Framatome and Ultra Safe Nuclear have signed a non-binding Heads of Terms Agreement to integrate their complementary resources through a joint venture to bring commercially viable, fourth-generation nuclear fuel to market for USNC’s Micro-Modular™ reactor (MMR®) and other advanced reactor designs.

“Ultra Safe Nuclear is a pioneer in the manufacture of both TRISO-based nuclear fuels and micro reactors, both of which contribute to a clear and attainable path toward a low carbon future,” said Ala Alzaben, senior vice president for North America Fuel at Framatome. “As one of the safest and most committed manufacturers of nuclear fuel in the world, we are proud of our unmatched regulatory record. This partnership is consistent with our vision to make our unique assets available to advanced reactor designs.”



FCM® fuel binds TRISO fuel particles in a durable silicon carbide fuel

“Framatome is an important strategic partner in our quest, and this move is a crucial step towards our vision of socially and environmentally responsible zero-carbon nuclear power,” said Francesco Venneri, CEO of Ultra Safe Nuclear. “We look forward to continuing our collaboration with Framatome to bring commercial quantities of TRISO particles and FCM fuel to market.

Ultra Safe Nuclear’s collaboration with Framatome follows the opening of USNC’s [Pilot Fuel Manufacturing \(PFM\) facility](#) in August, the first and only privately funded facility in the U.S. to manufacture TRISO particles. In addition, the facility’s engineers employ additive manufacturing – also known as ‘3D printing’ - to fabricate FCM fuel. The modular production lines for TRISO particles and FCM fuel, already demonstrated at scale at the PFM facility, are rapidly repeated to increase capacity to meet growing demand for the MMR and advanced reactor technologies more broadly.

“As a result of thorough review and due diligence, we selected Framatome as our partner. Not only does Framatome have a long history of safely and economically manufacturing nuclear fuels, the company’s deep experience in manufacturing will be key to our success in bringing commercial TRISO and FCM fuel forms to market in rapid fashion,” said Kurt Terrani, executive vice president at Ultra Safe Nuclear.

The joint venture expects to begin manufacturing TRISO particles and FCM fuel in late 2025. TRISO fuel production capacity will be used in the manufacture of Ultra Safe Nuclear’s FCM fuel and available to the broader commercial market. The partners have developed concrete plans to support rapid expansion to meet demand growth in the U.S. and global markets.

The MMR Energy System is a fourth-generation nuclear energy system that delivers safe, clean, and cost-effective electricity and process heat to users anywhere. The MMR is being licensed in Canada and the U.S. and will be the first commercially available “nuclear battery”. MMR deployments are moving forward, including the projects at [Chalk River](#) which is on target for first power in 2026, and the University of Illinois Urbana-Champaign, targeted for first power the following year.

About Framatome

Framatome is an international leader in nuclear energy recognized for its innovative, digital and value added solutions for the global nuclear fleet. With worldwide expertise and a proven track record for reliability and performance, the company designs, services and installs components, fuel, and instrumentation and control systems for nuclear power plants. Its more than 16,000 employees work every day to help Framatome's customers supply ever cleaner, safer and more economical low-carbon energy.

Visit us at: www.framatome.com and follow us on [Twitter](#) and [LinkedIn](#).

Framatome is owned by the EDF Group (75.5%), Mitsubishi Heavy Industries (MHI – 19.5%) and Assystem (5%).

About Ultra Safe Nuclear Corporation

Ultra Safe Nuclear Corporation, a U.S. corporation headquartered in Seattle, is a global leader and strong vertical integrator of nuclear technologies and services, on Earth and in Space. Major initiatives include the micro modular reactor MMR®, the fully ceramic micro-encapsulated FCM® nuclear fuel, and nuclear power and propulsion technologies for space exploration. The company is demonstrating MMR Energy Systems at the Canadian Nuclear Laboratories with Ontario Power Generation and at the University of Illinois Urbana-Champaign, with new deployment projects underway in the United States, Canada, and Europe.

Ultra Safe Nuclear is committed to bringing safe, commercially competitive, clean and reliable nuclear energy to global power and industrial markets. Ultra Safe Nuclear is working with NASA and the Defense Department on advanced radioisotope power, nuclear thermal propulsion systems and advanced materials using the same strict inherent and intrinsic safety principles to drive innovation in fuels, materials, and design.