

Framatome teams with General Atomics to advance PROtect enhanced accident tolerant fuel technologies

Feb. 20, 2020 – Framatome is teaming with General Atomics to study the application of silicon carbide for boiling water reactor (BWR) nuclear fuel designs. Advanced nuclear fuel designs using silicon carbide in the fuel channel will enhance the safety and fuel performance of nuclear plant operations. Framatome is conducting this research as part of its PROtect enhanced accident tolerant fuel (EATF) program.

“Teaming with General Atomics is just one more example of our commitment to operational excellence by leveraging industry experts to advance today’s fuel designs,” said Lionel Gaiffe, senior executive vice president, Fuel Business Unit at Framatome. “Our industry benefits from research and innovations built on the vast and diverse expertise necessary to support competitive, low-carbon electricity production.”

Framatome and General Atomics will test silicon-carbide materials for fuel channel applications to facilitate the removal of approximately 40% of the zirconium metal in BWR fuel designs.

Silicon carbide can replace zirconium alloys without adverse impact on fuel efficiency. At the same time, it provides substantial temperature and oxidation resistance to significantly reduce the amount of hydrogen that could be generated in the unlikely event of a severe accident. As a result, the silicon carbide is expected to offer a significant risk reduction and safety improvement for BWR fuel.

“We are excited about the opportunity to work with Framatome and explore new applications for our SiGA™ silicon-carbide composite,” said Jeff Quintenz, General Atomics Energy Group senior vice president. “We look forward to bringing this important product to market, helping improve the performance and economics of reactors around the world.”

In 2019, Framatome delivered lead fuel assemblies with PROtect EATF technologies to two U.S. reactors and one European reactor. These assemblies included Framatome’s chromium-coated cladding and chromia-enhanced pellets solutions.



General Atomics scale model channel box

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Framatome's experts continue to drive the PROtect program forward, building on the collective knowledge, skills and expertise of nuclear professionals from utilities, U.S. and French national labs, universities and industry organizations worldwide. Support from the U.S. Department of Energy has allowed Framatome to deploy EATF technologies significantly ahead of its initial 2022 target, further protecting and advancing safe, reliable and low-carbon nuclear power.

About Framatome

Framatome is an international leader in nuclear energy recognized for its innovative solutions and value added technologies 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 14,000 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: [@Framatome](https://twitter.com/Framatome) and LinkedIn: [Framatome](https://www.linkedin.com/company/framatome). Framatome is owned by the EDF Group (75.5%), Mitsubishi Heavy Industries (MHI – 19.5%) and Assystem (5%).

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