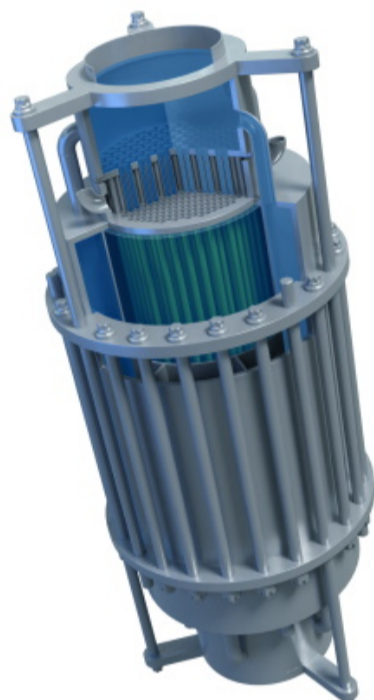


## Dual Fluid, TRIUMF team up for SMR development

13 March 2023



Canadian-German nuclear technology company Dual Fluid has signed a memorandum of understanding (MoU) with Canadian research centre TRIUMF to advance the development of a small modular reactor based on Dual Fluid technology.



The core of the Dual Fluid reactor design (Dual Fluid)

"The goal of the new reactor concept is to use processed nuclear waste as fuel, and to exponentially increase the performance of today's nuclear power production technologies," Dual Fluid said.

As part of the MoU, Dual Fluid and TRIUMF will focus on materials research to address several challenges inherent to nuclear power, including the identification of materials that can withstand the high demands in the reactor core, which operates at temperatures of 1000°C and produces highly radioactive and corrosive conditions.

This research will leverage TRIUMF's materials irradiation facilities - the Proton and Neutron Irradiation Facilities - and metallurgical testing capabilities. Collaboration is also planned on detector development and reactor core imaging.

TRIUMF, located in Vancouver, is a national centre owned and operated as a joint venture by a consortium of universities, with funding from the National Research Council of Canada.

"The collaboration with TRIUMF is a major milestone for us, as the planned material testing is crucial for further development," said Dual Fluid Chief Research Officer Ahmed Hussein. "Given TRIUMF's expertise, we cannot imagine a better partner."

"TRIUMF is very pleased to be engaging with Dual Fluid on this exciting project," said Kathryn Hayashi, CEO of TRIUMF Innovations, TRIUMF's commercialisation arm. "The world is looking increasingly to nuclear power as a major opportunity for energy generation, and TRIUMF is uniquely poised to advance these technologies through materials characterisation at our leading-edge facilities and with support from our wide-reaching international network of subatomic physics research expertise. Our agreement with Dual Fluid also spotlights the strategic advantages that TRIUMF can enable for scientific collaborations between Canada and countries around the world."

Dual Fluid's compact reactor design features two loops: a fuel loop and a coolant loop. The reactor uses a liquid fuel comprising thorium, natural uranium and processed nuclear waste. It is cooled using liquid lead. It is designed to operate with fuel change intervals of about 25 years. The reactor can be used to generate electricity and or heat for the production of hydrogen. The company says the operating temperature of 1000°C enables new heat applications. Two sizes of the reactor are envisaged: the DF300 (with a capacity of 300 MWe) and the DF1500 (rated at 1500 MWe).

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Dual Fluid Energy Inc. was incorporated as a public company in Vancouver, Canada, in January 2021 to bring the Dual Fluid technology to serial production status. The prototype of a Dual Fluid reactor is to be launched within this decade, with serial production starting around 2034.

Researched and written by World Nuclear News

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