

GLOBAL FIRST POWER NEWSLETTER

February 2024



Latest News: MMR Design Update

In 2023, we updated the design of the MMR to boost power, flexibility and value while maintaining inherent safety features. The updates included:

- Upgrading from a maximum of 15 MW thermal output to 45 MW thermal
- Increasing the maximum service life from 20 years to 40 years
- Introducing refueling and direct cooling to enable the uprate and greater service life

These changes mean that future MMR projects can be built to run at a greater range of outputs, depending on the specific needs of the community or organization. It also makes the MMR more economical for these future owners.

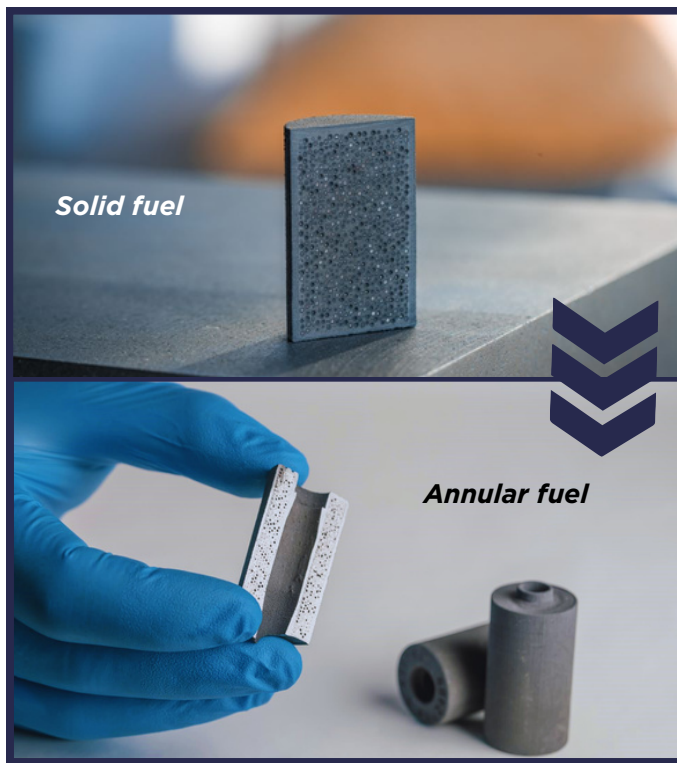
Who we are

We're proposing to build and operate Canada's first Micro-Modular™ Reactor (MMR®) at the Chalk River site, which is operated by Canadian Nuclear Laboratories (CNL).

We are a Canadian company, jointly owned by Ultra Safe Nuclear Corporation (USNC) and Ontario Power Generation (OPG).

Summary:

Output	45MW thermal Up to 15MW electrical
Service life	Up to 40 years
Refueling	Yes
Fuel assembly	Direct cooling
On-site fuel storage	Short-term



Tech corner

A key ingredient to increasing the output of the MMR was an update to the fuel design. We've moved from a solid fuel pellet to an annular one, which lets the helium coolant come into direct contact with the pellet to remove the heat.

As a result, cooling is more efficient and the fuel does not need to get as hot to transfer the same amount of heat. It also means the volume of fuel needed in the core is reduced, as are fuel stresses, adding even more safety margin.

Defueling/Refueling

The MMR will initially require refueling approximately every three years. To accommodate this process, the new, incoming fuel and the used fuel will need to be temporarily stored on site.

Fuel will be transferred from the MMR's core barrel to a fueling machine to dry storage casks – an approach that is safe, secure and in line with best practices at other operating nuclear facilities in Canada and around the world. Fueling operations will be performed within the reactor services building and maintenance enclosure.

The used fuel will remain on site in dry storage casks on a temporary basis. We're now working with industry partners to develop a plan to integrate this used fuel with larger, existing facilities for longer-term storage.



In Canada, the use of nuclear energy is regulated by the Canadian Nuclear Safety Commission

Over the course of the project's lifespan, it will require licences from the regulator to:

- prepare site
- construct
- operate
- decommission
- abandon the site – which means it is restored to its original state

An environmental assessment is also required. It looks at the whole life cycle of the project and considers the impact on the environment, the magnitude of that impact, and the ability to manage impacts.

Licensing progress

2019 ✓

Preliminary application for a Licence to Prepare Site (LTPS) submitted to CNSC

Environmental assessment commenced

2021 ✓

Portions of Management System submitted to CNSC (includes processes, procedures and controls)

June, 2023 ✓

Licence to Prepare Site application – Part 1 submitted to CNSC (available on GFP's website for public review)

2024, Q1

Complete Licence to Prepare Site application submitted to CNSC

Draft Environmental Impact Statement (EIS) submitted to CNSC for public review

2024, ongoing until completion of process

CNSC application review process, including:

- Technical review
- Public consultation
- Public comments on Draft EIS
- GFP revisions to Draft EIS and submission of Final EIS
- CNSC final decision on the Licence to Prepare Site application
- Public comment

A critical component of the licensing process and the environmental assessment is engagement. GFP will continue to engage with stakeholders and Indigenous Nations and communities throughout the project lifecycle.

Faces of GFP



Rahin Sifat, Management System Manager

Rahin oversees our management system, which includes all of the policies, procedures and processes to ensure we run our business and projects in the right way. *“What I do lays the foundation for, not only process, but also culture. Safety is my main priority – ensuring that our system supports a strong safety culture and then – beyond that – excellence across all of our operations. It’s a big deal that we are building the next generation of nuclear and I want to set the bar high.”*

Connect with us

Upcoming events

Spring 2024

In-person open house events in the Chalk River region

Fall 2024

Virtual open house live event and self-guided tour

Details on these events will be available soon on our website

Online

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Stay up to date on the project and upcoming events.
Sign up for our email list [here](#).