

Introduction to the MMR at Chalk River Project

Q3 2019



Who We Are



- Project and market development organization
- Proponent for the potential project at Chalk River Laboratories (CRL)
- Vision: Supply clean reliable power and heat to remote industrial operations and other off-grid uses



- Ontario's largest and lowest cost electricity provider; about 50% of Ontario's electricity
- Generation portfolio is more than 90% free of smog and carbon emissions
- History of safe nuclear operations and project management
- Experience working co-operatively with Indigenous communities and partners and stakeholders

Vision for project at CRL

*First step in commercializing Micro Modular Reactor™
to bring clean, reliable energy benefits to Canada*

Roles and Responsibilities



- Owns Chalk River site



Canadian Nuclear Laboratories | Laboratoires Nucléaires Canadiens

- Manages Chalk River site
- Conducting process to select proponent(s) to construct and operate small modular reactor (SMR)



- Conducts regulatory approvals process (e.g. licences)
- Conducts EA review process
- Canada's independent nuclear regulator



- Owner and proponent



- Designer of Micro Modular Reactor™ (MMR™) SMR technology



- Lead for licences to construct and operate (subject to regulatory approvals)
- Leads activities to support EA

Proposal for Micro Modular Reactor™

- Proposed 15-megawatt (MW) thermal (approximately 5-MW electrical) reactor
 - Electricity and/or heat applications
- Will serve as a model for SMR support of northern mining operations and other off-grid uses
- Application submitted to CNSC for Licence to Prepare Site
 - Subsequent licences required for construction and operations
- Notice of Commencement of environmental assessment announced in July 2019
- Seeking early input; continued engagement, opportunities for input at various stages

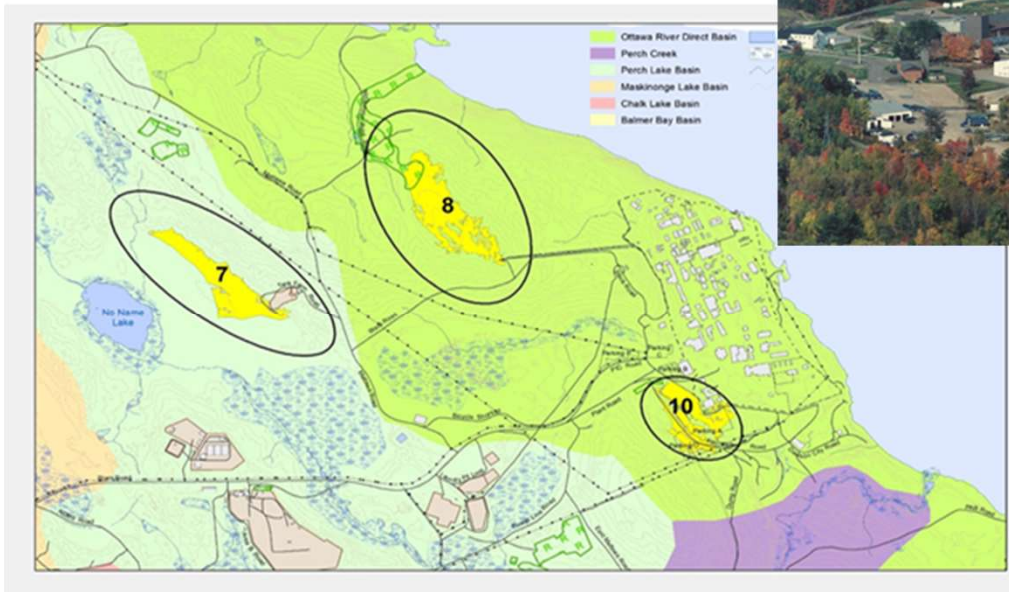




Micro Modular Reactor™ Technology

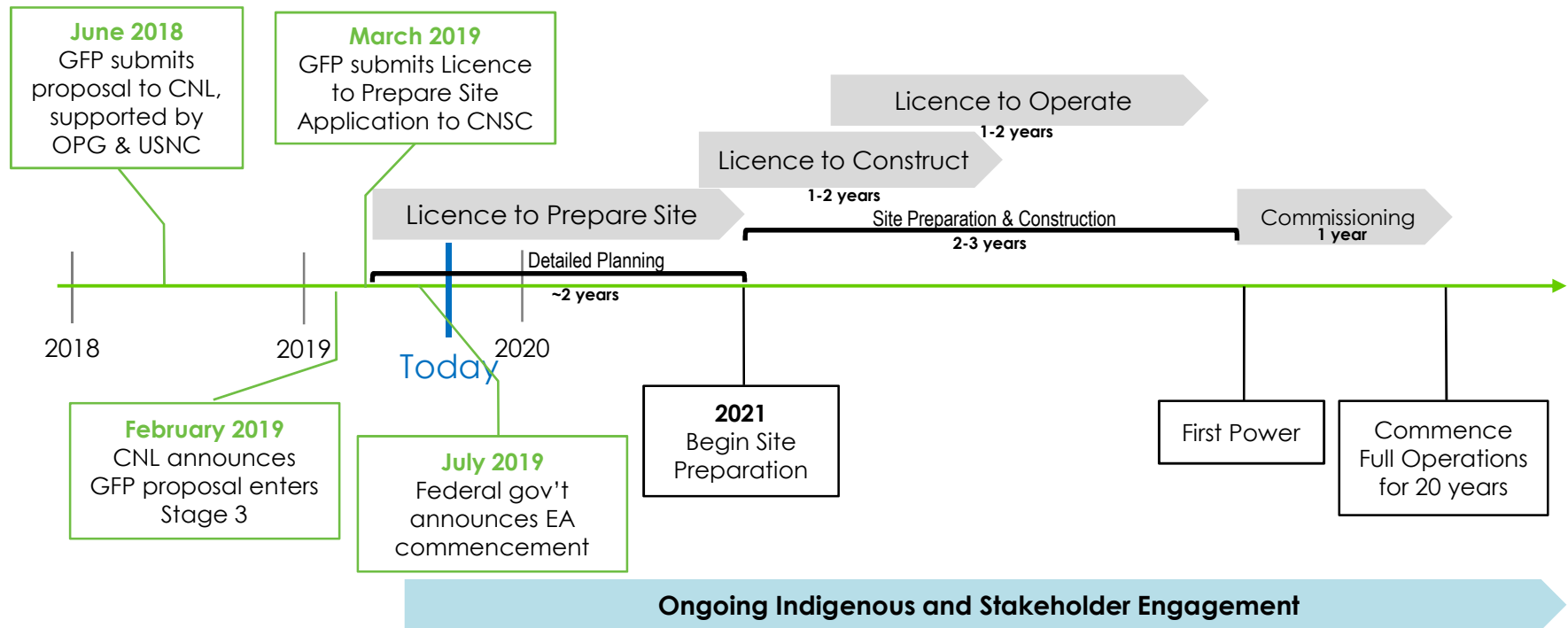
- MMR™ designed by Ultrasafe Nuclear Corporation (USNC), a US company
- Designed for remote communities or heavy industry applications (does not require grid connection)
- Generates high quality heat to be used to generate electricity or other heat applications
- Technology in use since 2000; similar designs in service in China and based on successful demonstrations in Japan, USA and Germany
- Advanced safety systems are inherently built into design
- No requirement for electrical power or water to operate safely or shut down reactor
- Constructed, commissioned and tested off-site; assembled on site
- Minimal operations and maintenance requirements
- Scalable/modular – modules can be combined for different sites/energy needs

Chalk River Laboratories Site



Project Activities & Milestones

(Planning Purposes Only)





Project Goals

- Demonstrate the benefit of SMRs as part of the solution to achieve climate change and environmental goals
- Demonstrates the value of SMRs as a cost-effective option to help solve energy challenges for heavy industry
- Support confidence in:
 - Project business model
 - Commercial model for potential market
 - Licensing and regulatory precedent
 - Technology
 - Project delivery including cost, schedule and operational performance
 - Long-term cost of power
- Potential launch pad for export opportunities
- Ultimately, enables future projects

Contact



www.globalfirstpower.com



www.usnc.com



www.opg.com