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Written submission from Doctors for Nuclear Energy

Mémoire de Doctors for Nuclear Energy

In the Matter of

À l'égard de

Decision on the scope of an environmental assessment of the proposed Micro Modular Reactor Project at the Canadian Nuclear Laboratories Ltd., in Chalk River

Décision sur la portée de l'évaluation environnementale pour le projet de microréacteur modulaire aux Laboratoires Nucléaires Canadiens ltée, à Chalk River

Hearing in writing based on written submissions

Audience par écrit fondée sur des mémoires

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Doctors for Nuclear Energy
Canada Written Intervention

Scope of the Environmental Assessment for the Global First Power Micro Modular Reactor (MMR)
June 1st 2020

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Chris Keefer, for the record.

I would like to begin by expressing my gratitude to the Canadian Nuclear Safety Commission (CNSC) for the opportunity to provide a written intervention on the scope of the environmental assessment (EA) for the Micro Modular Reactor (MMR) project being proposed by Global First Power (GFP).

I am a Toronto based Emergency Physician and Simulation Educator and the director of Doctors for Nuclear Energy, an international group of physicians from a variety of specialties ranging from Family Practice, Emergency Medicine, Radiology, Radiation Oncology and Molecular Immunology. We advocate for nuclear energy as a vital tool to combat the health impacts of climate change and air pollution. The evidence right here in Ontario clearly demonstrates that nuclear energy can completely replace fossil fuel sources like coal and dramatically improve air quality which locally has dropped our number of “smog days” from 54 in 2004 to zero in 2014 when the coal phaseout was completed. This was accomplished by bringing online additional reactors from the Bruce and Pickering Nuclear stations. A 2005 study by Ontario’s Ministry of energy estimated that Ontario would annually avoid 25,000 emergency room visits and 20,000 hospital admissions from the phaseout of coal. The clinical practice of myself and my colleagues has borne this out with a marked reduction in severe asthma and emphysema over this same period.

I personally spent 5 years working in the Yukon territory much of it in remote work camps and small outpost communities. These camps were powered by fuel that was flown in on bush planes at enormous carbon and economic cost. There were many leaks of this fuel into the delicate tundra environment. I was also well acquainted with the abysmal air quality of Whitehorse when a move was made towards government subsidy of wood burning. The strong inversions of the Yukon River valley trapped the woodsmoke in the city and made air quality a serious public health concern.

I am familiar with the unique challenges faced by Northerners when it comes to access to clean, reliable energy. The benefits of the MMR are multiple. It can provide clean, abundant energy for heating, food growing, telecommunications, process heat for mining and energy for all the other modern amenities every Canadian should have access to. There is no reason why Northerners should have a lower quality of life or energy then their southern counterparts. Despite Northern communities being remote places local air quality can be seriously impacted by burning diesel or biomass. This is a very real public health concern particularly as we understand to a greater degree the health impacts of particulate matter 2.5 (PM2.5) air pollution which go far beyond respiratory disease to include cardiovascular disease like heart attacks and stroke. Worldwide the World Health Organization (WHO) estimates that 7 million people die every year from air pollution. Many millions more are sickened or disabled by it. Nuclear energy offers a very real solution.

Environmental assessments are a vital part of any project development and should be thorough and appropriate in their scope. The MMR due to its incredibly small size and power output and passive safety design requires a footprint no larger than its site boundary as its Emergency Planning Zone (EPZ). This will minimize disturbance for surrounding ecology. Unlike light water reactors this technology does not rely on water as a coolant which decouples this technology from any impact on local marine ecology. The fuel is designed in such a way as to last the entire lifespan of the reactor which unlike fossil or biomass energy technologies will mean less transportation emissions and noise. Unlike wind and solar which due to their intermittency require back up firming, which at this point in Canada is almost exclusively natural gas, the MMR requires no fossil fuel inputs.

The MMR is a unique opportunity for the project site and Canada at large, especially the North. It has the capacity to decarbonize and provide air pollution free energy to rural and remote communities as well as mines and industry.

We are at a crucial decision point in human history. We must decide whether we continue with the combustion age which allowed our species to evolve and flourish but is ultimately threatening a sixth mass extinction or whether we embrace decarbonisation technologies like fission. The MMR is a step in the right direction. Its energy density means that there are less raw material inputs and a much lower land footprint compared with all alternative low carbon technologies. Its lack of intermittency means that it can truly be independent of fossil fuel back up. Its complete lack of particulate air pollution can safeguard the health of surrounding people and animals.

I urge you to help this project progress through the environmental assessment process with the necessary checks and balances but without excessive burdens imposed by anti-nuclear activists based on the poor understanding of the relative risks of radiation versus air pollution. The risk benefit ratio to the local environment and the world at large in my opinion is highly favourable to the MMR.

Thank you for your consideration,

Chris Keefer MD