



**Submissions of Environment North to the Canadian Nuclear Safety Commission
Regarding the Micro Modular Reactor Project at Chalk River**

September 14, 2019

This is the submission of Environment North and also a letter in support of the submission received by the Canadian Environmental Law Association regarding the project description for the Micro Modular Reactor Project at Chalk River (herein, “MMR” or “SMR”).

Since 1972, Environment North has functioned as a regional non-governmental environmental organization.¹ Through research, education and community advocacy we promote sustainable communities and conservation of our resources. Based in Thunder Bay, our goal is to benefit the community by protecting the environment and increasing the public's understanding of the environment. Our comments on the project description are as follows.

First, because of the use of thresholds introduced in the Project List under the *Impact Assessment Act*, this will be Canada’s first and last SMR to undergo a federal environmental assessment. While we have requested the rationale for this threshold-approach to be explained and supported by scientific evidence, this request remains outstanding. We reiterate our concern about this threshold approach. For instance, an electricity generating facility of 199 MW could supply a small city such as Kingston and can have significant impacts to the environment.

Also, by way of example, from 2002 to 2005 Environment North and others had considerable concerns over a proposal by Synfuel Technologies to build a 199 MW power generation facility in Thunder Bay. The method was by gasification of petroleum coke and export to the Midwest grid in the United States. There were many shortcomings in project proposal from inadequate measures for transporting and storing the fuel to dealing with the waste. Environment North and others expressed their concerns to the Ministry – of particular concern was that this project was not subject to an Environmental Assessment, for the reason it was below a 200 MW threshold. The Minister agreed to EA and the process began. Ultimately the proponent did not complete the EA process and the project did not proceed.

¹ Online: www.environmentnorth.ca

Further, a threshold approach fails to capture the cumulative effects of multiple projects in the same geographic area (i.e. even if there were multiple Small Modular Reactors in one community, if each SMR were below the 200 MW threshold, an IA would not be required). Again, there are potential parallels with the Synfuel proposal. They disclosed “off the record” that, after a unit of 199 MW was under construction, they intended to build more 199 MW units. One might suppose that one SMR of less than 200 MW would be more than sufficient for a single First Nation. However, if the proposed “Ring of Fire” (with multiple mine operations), is developed, it could “justify” several SMRs.

Secondly, we do not support regulatory agencies, like the Canadian Nuclear Safety Commission (CNSC), in conducted environmental assessments as they, for instance, do not have expertise in sustainability assessment which is a key consideration in EA review. We are further concerned by the sustainability of the proposed project, as there is no mention of it nor its accompanying principles (ie. precautionary or polluter pays) in the proponent’s project description.

Thirdly, we do not support the project description’s allegation that:

Once the Adaptive Phased Management (APM) plan has been commissioned by the Nuclear Waste Management Organization (NWMO) in preparation for final disposal in a Deep Geological Repository (DGR), the reactor vessel will be opened, and the graphite blocks containing the used fuel (i.e., fuel elements) will be transferred to the DGR.

It is possible that a DGR will **not** be available to provide long term storage for the high level waste (HLW) produced by the MMR from the Chalk Site or any future SMR site because a safety case cannot be made for a DGR. Therefore, the HLW from the SMRs will likely be stored either on site (ie. the MMR HLW will be stored underground within the Citadel Building at the Chalk Site and future SMRs will store their HLW on site, in the remote communities where they are located). This raises serious safety concerns and impacts of climate change, (ie. forest fires, flooding and forced evacuations – such as those experienced by Northwestern Ontario this year) that must factor into both temporary and long-term storage plans.

In the alternative, it is possible that the Nuclear Waste Management Organization will apply their APM provision to create a temporary shallow storage repository at a central site - post 2023 - after consent has been given by a host community. This means that in addition to current existing HLW from present nuclear reactor sites, the chosen site for the DGR will also be required to receive all of the MMR and any other SMR HLW wastes.

Environment North submits this poses serious concerns because then the numbers of transportation routes by truck or rail will be increased, the tonnage for storage will be increased and the risk factor for each and every community along these routes will be increased.

In summary, it can be argued that it is wrong to state that this is a “clean and reliable source of energy “given the fact that its waste is the most toxic, most dangerous and the longest lived waste known to mankind. To proceed creating more radioactive waste disregards the safety of

our environment and all of its inhabitants, the plant and animal life and most importantly the children that make up our future generations. For the foregoing reasons, we do not support the approval of this project nor the advancement of this project's EA.

Thank you for considering our comments and we welcome involvement in future consultation proceedings.

Sincerely,

Dodie LeGassick, Nuclear Program Manager
ENVIRONMENT NORTH