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**To:** Aimee Rupert, Environmental Assessment Officer  
Canadian Nuclear Safety Commission

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**Subject Line:** Micro-Nuclear Reactor Proposal

**CEAA Reference Number:** 80182

I am against this proposal for the following reasons:

1. The micro-size enriched uranium reactor ("MEUR") is supposedly designed to make them locatable virtually everywhere and affordable by anyone. Using enriched uranium reactors ("EUR"), with its inherently non-fail safe design is asking for a dramatic increase in risk to the environment and public. Large EUR's have an overall nuclear efficiency of 0.75% or so, followed by a 30% efficient steam cycle, for an overall efficiency of 0.225%; we can't get much worse than this. However, as you scale down the design to an MEUR, both the nuclear and thermal efficiency will likely get even worse.
2. Both MEUR and EUR produce fissionable material that can be used to make nuclear weapons. Security to ensure the nuclear material, and compliance with nuclear safety codes is not scalable. There is no foreseeable method so as to keep nuclear incidents (#/yr and severity, measured by MPPD, Maximum Probable Property Damage, person-yrs lost, etc.) to historic levels (or better). Therefore MEUR's will have an increasing risk exposure as they are used more & more and at diverse locations.
3. Once the first MEUR is approved, all of the erroneous assumptions (announced, latent, denied, or hidden) will likely be rolled in together as to the MEUR class risk. After that, only risks that are significantly worse than the first MEUR will be able to be challenged at subsequent licensing and approvals. As most of these risk are "high severity, low probability", it will be years or decades before the true risks are known, rather than the assumed or "hoped for" risks. By then, there could be hundreds to thousands of MEUR's, all with the same or similar latent risk. The cost to renovate these MEUR's (or prematurely shut them down because we suddenly realize just how risky the MEUR's truly are, but we have become overly dependent upon the MEUR's, and have no other viable alternative, and extensive infrastructure relies on each of the MEUR's) becomes impossible to afford or achieve socially or politically. All of us have been backed into a dead end from which there is no escape via the approval process for the very first MEUR.
4. Currently, nuclear risk is assumed and insured by the public for all EUR's as public utilities. This risk method for EUR's would be unacceptable for privately owned, for-profit MEUR's.
5. Thorium-based nuclear reactors are fail-safe, easily scaleable, 70% nuclear efficient or better, produce a fraction of the spent fuel that a MEUR or EUR does, and produces no fissionable materials that can be used to make nuclear bombs.

I strongly suggest that: a) all MEUR's must use thorium based nuclear technology; b) No MEUR may use enriched uranium nor any similar fuel source; c) Owners of MEUR's must have private insurance, paid in advance, with cradle to grave coverage irregardless of bankruptcy, fraud, uberrima fides, or any other reason for insurer to escape from liability that fully covers MPPD and person-yrs losses; d) A FMEA (Failure Mode Effects Analysis), PPA (Potential Problem Analysis), FTA (Fault Tree Analysis), RA (Risk Assessment), SCADA analysis, Human Error Proofing, Regulatory Auditing, and similar techniques should all be mandatory implementations by independent experts prior to approval of the first MEUR, while assuming one MEUR per 5,000 people, scattered throughout all of Canada.

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