



September 28, 2018

Canadian Nuclear Safety Commission
P.O. Box 1046, Station B
280 Slater Street
Ottawa, Ontario
K1P 5S9
Via: cnscconsultation.ccsn@canada.ca.

Re. Greenpeace comments on REGDOC-1.1.5: Licence Application Guide: Small Modular Reactor Facilities

To whom it may concern,

Thank you for this opportunity to comment on the draft licence application guide for Small Modular Reactors (SMR).

As will be discussed, Greenpeace is concerned that the Canadian Nuclear Safety Commission's (CNSC) proposed regulatory approach has been driven primarily by a desire to encourage the expansion of the Canadian nuclear industry. This is contrary to the CNSC's legislated mandate to protect Canadians from unreasonable risk.

Although SMR developers tout the increased safety benefits of their hypothetical reactor designs, others have observed that these asserted safety benefits could be undermined by the dilution of regulatory requirements.¹ After reviewing REGDOC 1.1.5, Greenpeace shares this concern. Greenpeace urges the Commission to reassess the motivations behind its proposed regulatory approach.

In Greenpeace's view, the CNSC should test the adequacy of its proposed guidance against the growth scenarios proposed by SMR developers. Industry has been propagating a hopeful public narrative where fleets of SMRs will be deployed in communities across Canada. In such scenarios, affected communities will rightly expect broad access to information on the risks of SMRs and the justification for claims made by the CNSC and SMR proponents. The public may also reasonably hope to participate in decisions related to the siting of SMRs in their communities. Greenpeace feels the draft REGDOC would be unable to address such expectations.

¹ M. V. Ramana et al., "Licensing small modular reactors," *Energy*, 61, pgs. 555 – 564.

Request: The CNSC should review and revise the regulatory document with an eye to whether the proposed guidance meets modern social expectations for transparency, pro-active disclosure and public participation, especially in light of industry proposals to deploy fleets of SMRs in communities across Canada.

Siting & Environmental Assessments

Considering the industry's hope of siting SMR reactors in communities across Canada, the guidance document needs to provide clearer direction on how site suitability will be transparently evaluated.

As discussed in past submissions to the CNSC², the Commission has relied on environmental assessments to judge site suitability for current reactors. However, the CNSC has never stated this publicly. Greenpeace only learned of the CNSC's use of environmental assessments to judge site suitability from documents obtained through Access to Information.³ Greenpeace urges CNSC staff consider how the failure to explicitly consider site suitability undermines public trust in the Commission.

Request: Greenpeace requests the CNSC explicitly state how it has used environmental assessments to judge the suitability of existing nuclear stations so it can be contrasted with whatever approach is used with SMRs.

Notably, the draft regulatory document states there will only be an environmental review if it is required under the proposed *Impact Assessment Act* (IAA). However, what is not acknowledged is that the CNSC has been lobbying the federal government to exclude SMRs from assessments under the IAA. Greenpeace learned this through documents obtained through Access to Information.

For example, an Information Note prepared for the CNSC's previous president in April 2018 states:

The CNSC has indicated that the [project] list should not be expanded, particularly given the strong oversight of the CNSC under the NSCA. The CNSC is recommending that a threshold be established for power reactors so that small units are not subject to an impact assessment (IA). The number of nuclear project (sic) subject to an IA will likely be very limited in the foreseeable future.⁴

² For example, 15-H8.10A, Greenpeace, *Supplementary Comments The Darlington Nuclear Station: Risking Toronto and the Environment*, October 19, 2015

³ See Access to Information request A00036517_93-000904

⁴ Prepared by Sarah Eaton et al., *Information Note for the President – Meeting with Cameco*, April 12, 2018, pg. 5 EDOC# 5476531, A-2018- 00061.

The CNSC has refused to release its detailed requests and reasons for exempting SMRs from impact assessments.⁵ However, all other submissions to the government on the *IAA* are publicly available. This has undermined Greenpeace’s ability to participate in consultations on the *Impact Assessment Act* and comment on REGDOC 1.1.4. The CNSC’s secrecy is unaccountable and unacceptable.

Notably, a review of licensee submissions shows the nuclear industry is also requesting SMRs be exempt from impact assessments. It thus appears that the CNSC’s closed-door lobbying effort is motivated by a desire to encourage the expansion of the Canadian nuclear industry. For example, a Briefing Note prepared for the CNSC’s previous president states:

The future of the nuclear industry, especially for Canadian participants, is dependent on the success of SMRs. It will be very important to get the Project list right so that there is a reasonable threshold on what kind of projects need an IA. It will also be important that “early review” about the “national interest” be timely and that a “yes” decision is not reversed later in the process for reasons that are not evidence-base.⁶

For the record, Greenpeace is deeply disappointed by the Commission’s closed-door lobbying effort to exempt SMRs from impact assessments. In effect, the CNSC has been lobbying to reduce public scrutiny of the deployment of SMRs and deprive Canadians of information on the potential impacts of SMRs in their community.

As noted, the objective of the CNSC’s lobbying appears to be to encourage the development of the Canadian nuclear industry. It is noteworthy that the federal government’s Expert Panel on environmental assessment observed there is a “...perceived lack of independence and neutrality because of the close relationship the NEB and CNSC have with the industries they regulate.” The CNSC’s decision to secretly encourage the federal government to exempt SMRs from impact assessments provides additional evidence that the CNSC continues to lack neutrality in its oversight of the nuclear industry.

Request: Greenpeace requests the development of REGDOC 1.1.5 be put on hold until the CNSC has released all correspondence with federal Ministries outlining its recommendations and reasons for excluding SMRs from impact assessments.

⁵ *CNSC’s Comments on the Consultation Paper on the Approach to Revising the Project List and the Information Requirement and Time Management Regulations*, June 2018, EDOC# 5545448, A-2018-00149

⁶ *Scenario Note and Annotated – NRCAN Portfolio Heads Meeting, Agenda April 12, 2018*, pg. 3, EDOC# 5504411

Transparent Accident Consequence Analysis

Given the CNSC has used environmental assessments (EA) in the past to assess site suitability, the Commission's lobbying efforts to exclude projects from EAs raises a question: what criteria will be used to judge whether a site is unsuitable? This is not addressed in the proposed regulatory guidance.

Environmental assessments under the Canadian Environmental Assessment Act (1992 and 2012) required the CNSC to publicly assess the offsite impacts of accidents and malfunctions. Although Greenpeace has opposed the CNSC's decision to exclude accidents on par with Fukushima or Chernobyl from consideration in environmental assessments, such reviews were the only publicly accessible source of possible accident impacts.

In Greenpeace's view, it is no longer socially acceptable or prudent to ignore such accident scenarios in light of the Fukushima disaster. Indeed, the transparent assessment of major accidents has been a focus of public concern during CNSC hearings since the Fukushima disaster. Notably, the CNSC's Fukushima Task Force's observed that "...it may be useful for the environmental assessment process to include consideration of severe accidents, should this be regarded as responsive to public concerns".⁷ Unfortunately, the CNSC failed to change its approach to accident consequence assessment.

In Greenpeace's view, it is essential that the CNSC require licencees to produce and publish accident consequence assessments for proposed SMR facilities. Such information will be needed for the public to assess the suitability and acceptability of proposed SMR sites. Provincial public safety agencies will also require such information to develop emergency response plans with impact municipalities.

Of note, internal CNSC documents obtained by Greenpeace acknowledge that SMRs "...all could produce energies (and potential source terms) equivalent to a single unit NPP..." if deployed as multi-unit facilities.⁸ This underlines why transparent worst-case accident assessments will be needed to inform siting reviews.

Request: Greenpeace requests the Commission require SMR developers publish accident modelling, including worst-case scenarios, before siting decisions are made.

⁷ CNSC, *Fukushima Task Force Report Draft*, October 2011, pg. 56.

⁸ Small Modular Reactor Update – Readiness for Regulation, Presentation for Management Committee, January 14, 2016, Pg. 5. Access to Information request A-2016-00010

Transparency

Greenpeace feels the draft regulatory document lacks sufficient guidance for licencees and Commission staff related to transparency, pro-active disclosure and public participation during the approval of SMRs.

The CNSC's safety philosophy assumes that licencees are responsible for the safety case. In the past, the CNSC has denied Greenpeace access to correspondence and assessments related to pre-licensing reviews. This has deprived Greenpeace of a meaningful opportunity to assess the safety of reactor proposals. This practice should not be permitted for the approval and licensing of SMRs.

In Greenpeace's experience, licencees have used their ownership of safety analysis and licence applications to prevent or delay the release of information needed to assess the adequacy of licence applications and facility operations. Given the broad range of SMR developers undergoing design reviews by the CNSC, the Commission should set clear expectations related to pro-active and reactive information release.

Request: The draft document should state that SMR developers and operators are expected to operate within a culture of openness and transparency. This should include a stand-alone section on transparency and public disclosure.

Transparency: Traceability of Novel Regulatory Approaches

The CNSC's proposed flexible approach to regulating "novel" reactor designs requires new guidance to ensure that regulatory decisions are traceable and intelligible.

Historically, the CNSC has regulated the development of CANDU reactors. Although the Commission subscribes to a non-prescriptive regulatory approach, its unique focus on CANDU reactors has meant its detailed requirements reflected the particularities of CANDU reactors.

Proposed SMR designs have a wide range of "novel" safety features that are not reflected in current safety requirements. The CNSC's non-prescriptive regulatory approach allows staff assessments to theoretically accommodate and accept such novel safety features. Otherwise put, the CNSC's regulatory approach provides staff a high degree of subjectivity in assessing the adequacy of SMR designs.

Considering the lack of detailed design requirements for SMRs and the range of prototype designs being proposed in Canada, it is reasonable to assume that CNSC staff will make numerous decisions to accept or reject unique design features and adapt regulatory expectations. The CNSC should ensure that these subjective staff judgements are well documented and transparent. Staff decisions to adapt regulatory expectations

to the novel characteristics of different SMR designs should be both intelligible and traceable.

In Greenpeace's view, the CNSC's current approach to pre-licensing is opaque. It will not permit members of public or civil society groups to understand and scrutinize the approval of SMR designs.

Request: The CNSC should create a registry of all correspondence and documentation detailing the basis for pre-licensing reviews of SMR reactors. This should be acknowledged in the proposed regulatory guidance for SMRs.

Waste Management

The draft regulatory guidance should acknowledge that there is no accepted method for managing the radioactive fuel wastes produced by proposed SMR designs.

The government of Canada made a significant policy mistake when it allowed reactors to be built in the 1950s and 1960s without a technically feasible and socially acceptable means of storing long-live radioactive wastes. Repeating this mistake should not be implicitly encouraged by the CNSC.

In its comments on the proposed *Impact Assessment Act*, Durham Region, which is currently the host community for ten reactors, has asked that: "Approval of a nuclear project should require a proponent to have a nuclear waste disposal solution available before the new/refurbished nuclear reactors are permitted to operate."⁹

Durham Region's request is in line with a key objective of sustainability assessment: discouraging decisions that will result in adverse effects or risks to future generations.¹⁰ Notably, Durham Region is currently concerned that it will become a de-facto long-term host community for radioactive waste due to the failure of industry and government to develop offsite facilities as promised.

In Greenpeace's view, the draft regulatory guidance is flawed because it fails to acknowledge the lack of long-term waste options for radioactive wastes produced by SMRs. Although the responsibility and policies for radioactive waste policy are outside of the CNSC's responsibilities, the draft regulatory document should acknowledge the lack of accepted long-term waste management options for SMRs proponents.

The draft regulatory document implies that wastes produced by SMRs will be managed eventually by Nuclear Waste Management Organization (NWMO). However, the

⁹ Garry Cubitt (Chief Administrative Officer, Durham Region) to Kevin Blair (Major Projects Management Office, Natural Resources Canada), "Environmental and Regulatory Reviews Discussion Paper," August 28, 2017.

¹⁰ Gibson, R.B. (2006). Sustainability assessment: Basic components of a practical approach. *Impact Assessment and Project Appraisal* 24(3): 170-182.

fundamental assumption of the NWMO's 2004 risk assessment was that "...the volume of used nuclear fuel which needs to be managed was assumed to be limited to the projected inventory from the existing fleet of reactors."¹¹

What's more, the *Nuclear Fuel Waste Act* required the NWMO to take into account ethical considerations when assessing the viability of differing waste management approaches. The NWMO's Roundtable on Ethics observed that an ethical nuclear waste management approach is an intractable problem. While acknowledging we must find a method of managing existing wastes, it stated outright that producing additional wastes would be unethical:

"[g]iven the large stockpile of high level nuclear waste that already exists in Canada and that will be hazardous for thousands of years, some solution to managing wastes as safely and effectively as possible must be found. Even if no ethically optimal solution exists, it would be ethically justified to adopt the least unacceptable option available. **By contrast, to justify new nuclear power plants or even replacing the ones now in place when they reach the end of their serviceable life, one would have to have an ethically sound waste management method, not just a least-bad one.**"¹² [Emphasis added]

Based on these assumptions, the NWMO's Advisory Committee made the following statement in its report to government in 2005:

The Advisory Council would be critical of an NWMO recommendation of any management approach that makes provision for more nuclear than the present generating plants are expected to create, unless it were linked to a clear statement about the need for broad public discussion of Canadian energy policy prior to a decision about future nuclear energy development..¹³

Notably, Greenpeace raised these issues with Commission staff during a 2008 meeting of the Non-Governmental Organization Regulatory Advisory Committee (NGO-RAC). Commission staff committed to respond to these issues, but never scheduled a follow up meeting.

Request: Greenpeace requests the Commission acknowledge that the NWMO's Adaptive Phased Management approach was only designed to accommodate waste from existing CANDU reactors.

¹¹ "Assessing the Options" The NWMO Assessment Team Report, June 2004, pg. 14. Available at: <http://www.nwmo.ca/Default.aspx?DN=1091,1090,199,20,1,Documents>

¹² See: Ethical and Social Framework (Version: June 24 2004) <http://www.nwmo.ca/Default.aspx?DN=744,274,20,1,Documents>

¹³ Advisory Council to the NWMO, *Nuclear Waste Management Organization -Advisory Council Final Report*, 22 September 2005.

Request: Greenpeace requests the Commission acknowledge that the ethical issues raised by the NWMO fall outside of its legislated mandate, but remain a legitimate issue of public concern that need to be considered before the construction of SMRs.

Request: The regulatory document should be revised to acknowledge that radioactive wastes produced by SMRs will not be managed by the NWMO.

Request: The regulatory document should state clearly that SMRs will not be approved without an already approved long-term radioactive waste management.

Conclusion

Thank you for this opportunity to comment on the draft licence application guide for SMRs.

As noted, Greenpeace feels the Commission should put the development of this guide on hold until it releases all documents and correspondence with the federal government related to the treatment of Small Modular Reactors under the proposed *Impact Assessment Act*. What's more, the Commission needs to review and rewrite REGDOC 1.1.5 in light of its legislated mandate to provide Canadians objective information on nuclear risks and protect Canadians from unreasonable risk.

Thank you for your attention.

A handwritten signature in black ink, appearing to read 'Shawn-Patrick Stensil', enclosed within a hand-drawn oval.

Shawn-Patrick Stensil
Senior energy analyst
Greenpeace Canada