

From:
To: [Consultation \(CNSC/CCSN\)](#)
Cc:
Subject: Submission - Comments on teh proposed regulations - reactor facility licence application guide - SMR REGDOC 1.1.5
Date: November-19-18 7:52:24 PM
Attachments: [Gordon Dalzell submission Draft Reactor Facility Application Guide - SMR REGDOC1.1.5.pdf](#)
Importance: High

To whom it may concern:

Mr. Gordon Dalzell requested that I forward this document to your attention under the public review due to technical difficulties at his end. I have copied Mr. Dalzell on this email.

If you require additional information, please do not hesitate to contact Mr. Dalzell.

Please confirm receipt of this document by responding to Mr. Dalzell's email.

Regard,

Kathleen Duguay

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Comments on the proposed Regulations
DRAFT Reactor Facility Licence Application Guide: Small
Modular Reactor Facilities - REGDOC 1.1.5

November 19, 2018

To: Email: cnscconsultation.ccsn@canada.ca

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Submission from:

Gordon Dalzell

Thank you for the opportunity to provide comments and to participate in this public review of the DRAFT Reactor Facility Licence Application Guide: Small Modular Reactor Facilities - REGDOC 1.1.5

BACKGROUND INFORMATION

This writer has decided to provide public comments on the draft document titled Reactor Facilities Licence Application Guide: Small Modular Reactor Facilities REGDOC 1.1.5 after the Province of New Brunswick media release that such SMR is being considered in conjunction with Moltex Energy and ARC Nuclear.

Government of New Brunswick:

https://www2.gnb.ca/content/gnb/en/news/news_release.2018.06.0832.html

ARC Nuclear:

https://www2.gnb.ca/content/gnb/en/news/news_release.2018.07.0906.html

Moltex Energy:

https://www2.gnb.ca/content/gnb/en/news/news_release.2018.07.0930.html

This writer who lives about 60 km from an existing 450 MW nuclear power generating station (Point Lepreau Nuclear Generating Station), has over the years participated in

various public reviews including Environment Impact Assessment of the PLNGS Solid Waste Management Storage Facility, Licence Renewal for the PLNGS in June 2017 and recently in the Reactor Oversight Review.

Over the years, I have been quite aware as have thousands of other community members that we have a large nuclear facility in our region. Up until the Fukushima Daiichi disaster event in 2011, this writer's consciousness did not focus on issues of safety with the local nuclear plant or for that matter the other facilities in Canada.

After that disaster, my awareness of safety became much more acute I welcome the CNSC initiatives to launch a public review process on issues of safety as they pertained from the Fukushima Daiichi disaster. In light of that disaster event, the Federal regulator consulted with Canadians and identified multiple safety related recommendations to respond to those contributing factor at the Fukushima Daiichi facility that needed to be addressed here in Canada at our own nuclear facility.

A report by CNSC was completed that included many recommendations that needed to be implemented to be raised such a disaster occurring at one of our nuclear facilities. This writer was very supportive of these changes ordered by the CNSC and consequently implemented by the Canadian facilities including to one in our region with my participation in the licence renewal of PLNGS and 2017 and the oversight report on nuclear facilities, I am feeling much more comfortable that Canadian nuclear facilities are operated safely. There are two reasons, the primary one is the regulatory requirement from CNSC and of course the efforts by the nuclear sites themselves adhering to the stringent CNSC regulations in place

When this writer read the Public Notice seeking public comments for "Licence application guide small modular reactor facilities (REGDOC 1.1.5 – DRAFT)", I wanted to take the opportunity to provide such comments and CNSC's draft requirements and guidance for proponents such as NB Power for submitting and application to the CNSC for the following types of licences for A SMALL MODULAR REACTOR (SMR) facility in Canada (2) licence to prepare a site, licence to construct and licence to operate. I note as well the Draft application guide also identifies considerations that the CNSC takes into account when assessing that adequacy of submissions.

I would like to point out that the first time the writer became aware first public such that SMRs are even being considered came up at the news conference in June 2018 when the New Brunswick Energy Solutions Corporation announced the participation of Advanced Reactor Concepts (ARC) in the nuclear research cluster that will work on research and development on small modular reactor technology.

It appears that the Draft document does not provide a description for the public of how these SMRs are different from the traditional nuclear power generating plants such as the one in our area that produces 660 MW of electricity. It is my understanding that the technologies are uniquely different from many complex ways. Further, I have learned from NB Power official that the nuclear fuel from these SMR can originate from recycle or reused from existing used CANDU reactor fuel currently in storage at these existing nuclear sites.

The fact that this community member had to go searching from this information instead of finding it in the Draft Licence Guidelines is an indication that this eventual public regulatory guide from proponents lacks a recognition that such guidelines are not exclusively just for applicants by themselves but for access and understand for the public at large especially public interested parties in particular to those who will be living in vicinity of such SMRs in the future.

Obviously the applicants do not need an explanation of how SMRs operate but as the CNSC uses the word novelty on page 14 first paragraph, complexity and potential for harm. Therefore; it is incumbent for CNSC to include in its guidelines an expectation of applicants to include a section describing how those SMRs work, how they are different from traditional nuclear power plants and how and when the nuclear fuel will come from. The CNSC within its regulatory framework as well as the applicants have a responsibility to educate the public on such new technology.

My recommendation in this regard would be consistent with Section 3.0 "other regulatory areas 3.2 public and aboriginal engagement". Since these future applications will be part of the public record, the Guidelines should clearly spell out its requirement and

expectations that the public will require help in understanding those new SMR if the applicant and regulator wants to gain social public acceptance.

Therefore, the regulations need a much more robust set of rules on how proponents are to inform and engage the public on these new nuclear technologies. At this point in my submission, I will provide specific comment on the various pages of the Draft Guidelines for Small Modular Reactor Facilities.

Section 2.1 Applicant's General Information: Under the applicants general information, sometimes the applicants will have international or U.S. partners, associated and financial bankers as well as consulting experts (or companies) that are very closely involved but not actual applicants.

For example, here in New Brunswick it would be anticipated that NB Power would be the applicant in any future licence application for a Small Modular Reactor (SMR) facilities. Where do the vendors fit in for application purpose? This information required in 2.1 may not cover all the other information from these partners, backers as is the case with U.S. and/or UK companies partnering with NB Power as recently publically announced. I am concerned that a lot of important information could get left out (not required) or missed in the Draft Regulation under review. CNSC needs to know in the applicant's general information section who are all the background players and contact parties.

By following the Draft 2.1 section, there is no requirement for the applicant to include this basic information right up front in their application. This section needs another requirement after (i) to cover these additional information requirements. From what this reviewer can tell, there will be heavy involvement and partnership with US and UK Nuclear vendor companies.

Since the application will be part of the public record the public needs to know all this information right up front in the applicant's general information section of the regulations. This will allow the interested parties in the public domain to research their background on applicant's history and expertise etc. Regulatory requirements will ensure

this information is included. My comments and recommendations may be best included in Section 2 - Description of the project.

2.2.1 Management System

1. (c) Number and size of radioactive or nuclear sources present. This section needs to include reference location of these sources of these nuclear sources. It is my understanding that the nuclear fuel will be from existing fuel stored at an existing nuclear site such as at PLNGS site.

This technology of reusing exiting nuclear fuel to run these SMRs needs to be clearly included under this section. I did not see if such critically important information would be covered in 23.1 – 2 Description of the Project.

Section 2.3 Other Regulatory Areas

Since we are dealing with a regulatory application on a new type of nuclear facility namely SMR, the draft licence application guide needs to add the word enhanced public information and disclosure program by adding the word engagement to #1. As well a new category of public education needs to be added as well. Very few Canadians, I submit, I especially those who live in close proximity, would be familiar with this new type of nuclear generation facility known as Small Modular Reactor.

The traditional large 680 MW at PLNGS is one that there is more understanding of over the 40 years of operation. Stringent regulatory control and public information provided. These SMRs are a different “kettle of fish” for lack of a better analogy for most of the public and I suspect even for the federal regulator at this point. This does cause this writer concern.

The Draft Guidelines need to reflect this new technology within the regulatory requirements for applicants to fulfil. One cannot expect the current public information and disclosure process to meet the need of the CNSC requirements when it comes to the site preparation and licencing of these new to Canada facilities.

I would recommend the word engagement be included in #1 public information and disclosure program as it is included in #2 aboriginal engagements. #4 financial guaranties are particularly timely for a proposed development of small modular reactor facilities considering NB Power's public debt is four billion dollars. This writer predicts there will be extensive opposition from the environmental non-governmental organizations (ENGO) based on the past and current positions including excessive cost overruns and financial resources being diverted from renewable energy sources development.

This writer does share that latter point about diverting financial resources from renewable opportunities. The Draft Guideline need to include a new section within the guidelines that covers the reduction of CO2 emissions and Canada's commitment and action to reduce these climate changes causing emissions. It is a perfect place for the applicant to start the application with a new nuclear technology that will utilize existing nuclear waste fuel being stored in the existing facilities such as PLNGS. One could argue such information may not be required but unless the CNSC requires such information of applicants in just may not be covered in a manner that the public need to know to allow them the opportunity to either agree or dispute such a conclusion.

The fact that these SMRs will recycle used nuclear waste fuel is an important relevant aspect of these small modular reactor facilities. This means no new uranium will need to be mined thus avoiding the CO2 emissions from the mining process. It is important for the regulator to put these guideline regulations under review within a laser public content that is very concerned about climate change and challenges to reduce CO2 emissions.

This applicant needs to be given clear regulating guidelines to prepare, engage, and educate the public well before the application is completed for submission.

Comments on Appendix A - Developments of the Licencing Basis for Small Modular Reactor Facility

It is good to see that CNSC recognizes that applicants are to address CNSC requirements in a manner that is commensurate with novelty and complexity and potential for harm that the activity represents. Having said that this writer questions whether these Draft

Regulations for licence application guide small modular reactor facilities should remain in Draft format to allow the potential applicants and industry in general to complete more exploration and research on these technologies being considered by various potential industrial applicants.

This writer as an environmental advocate in our community who focused on clean air and climate change issues recognizes that these new nuclear reactors (SMRs) could play a big role in Canada reducing its GHG levels primarily CO2 emissions but such thoughts are tempered by the fact that these new types of reactors are still under exploratory development and issues of safety claims may not yet be supported by supporting evidence.

Quite frankly, this writer after Fukushima Daitchi had lost faith on the safety of nuclear power. Following the Fukushima Daitchi CNSC review of lessons learned with many ordered changes to current large nuclear generating facilities, this writer confidence and assurance increased after such changes to current facilities addressed the potential safety concerns identified in the CNSC study of what went wrong at Fukushima Daitchi . Now over the last four years with the licencing renewal of Point Lepreau and 2017 Oversight Report with my careful analysis, my confidence increased even more that our Canadian Nuclear facilities are operated safety without a doubt. One of the key players in my confidence building is related to CNSC, the federal regulator along with the licensee's own commitment and attention to safety.

Now it appears that the CNSC in Appendix A is starting from square one trying to develop these regulations currently under review as these small modular reactors are in some respect still under exploratory development. It is somewhat like the analogy to the "cart before the horse".

These new reactors are not the water cooled reactor designs; we the public and the regulator have been used to. Those 70 years of experience of CNSC has instilled much confidence and expertise to ensure our current nuclear reactor facilities are operated safely. This cannot be said for these new small modular reactors. This makes me and potentially thousands of other people nervous. This is not the kind of technology and

regulatory oversight that can afford a “first of its kind” or “let’s see how things development” approach to give Canadian of kind of reassurance they need to feel confident these SMRs will run safely.

These Draft regulations are attempting to be developed on a technology that will have new engineered safety features that will have limitations and uncertainties that must be understood and addressed.

These regulations cannot be expected to provide all the assurances needed to authorize CNSC to licence these SMRS even with the graded approach cited in the Draft Guidelines Regulations. That makes me even more apprehensive if that was not bad enough, how about lack of operational experiences a reality of the current state of affairs in Canada in respect to the SMRs.

The regulations under 2.3 Page 13 - Other Regulatory Areas depends on the conventional format and actions under this area.

The Draft fails to flush out the unique challenges of developing such public information program on these new reactors. The regulations need to be much more prescriptive with proponents in this are to help the public (A) understand how these SMRs work (B) how CNSC will set up safety rules (C) help public gain a level of confidence in their safety operations. This draft need to do much better to direct these future licensees what they need to do to give the information to the public. Seven words in 2.3 are inadequate. There are many reasons to believe that this regulatory framework based on 70 years of experience and can be applied to advanced reactor technologies; however, there are an equal number of reasons where this regulatory framework may not be applied despite event the graded approach. It appears that this graded approach is based on regulate as we go despite the required evidence approach to ensure safety.

I accept that CNSC regulatory processes and oversight are all about safety and risk management but these small modular reactors are just so new and in development may not be possible for even the CNSC to adequately protect the public despite best efforts and experience. The CNSC processes won’t be the issue or problem but is the fact that

these SMRs are still in the design development phases with not sufficient certainty that all the technical aspects are known to guarantee their safe operation prior to be granted a licence.

RE: APPENDIX A

A-1 Applying a Graded Approach

Page 14 – It appears to be premature for the CNSC to even approve a licence to “prepare a site” when there are so many unanswered questions on risk on these small modular reactors that still need supporting evidence. It is still not clear at the time of this Draft Regulatory process that we understand risks including associated uncertainties and ensuring that these risks are mitigated. CNSC acknowledges that risks are to be mitigated and such play a significant role in making regulatory recommendations and decisions. If these Draft regulations REGDOD 1.1.5 are approved now, a proponent could prepare an application to prepare site for a later application to construct or operate one of these SMRs.

In my view, it may be premature to approve REGDOC 1.1.5 until much more information on risk and safety issues are understood with supporting evidence with the “quality of that evidence” being critical.

The regulation REGDOC 1.1.5 under public comments has as its CNSC mandate sector 24 (4) of the Nuclear Safety and Control Act (NSCA). In my view, CNSC may find it difficult to fulfill this mandate 24 (4) b that is “to make adequate provision for the protection of the environment, the health and safety of person and the maintenance of national security”. The reason is clear at this stage, the CNSC required evidence of these SMRs is lacking at this point to the regulatory approval stage.

My recommendation would be to postpone or delay the approval of the REGDOC 1.1.5 on SMRs until both the CNSC and the industry provide more evidence based information for the CNSC to review. Here in New Brunswick, it may have again been premature to make public announcement before the more technical and regulatory rules were in place.

These SMRs public announcements only raise public expectations and give the impression that such approval could be forthcoming notwithstanding fact that the proponent here did report that such development could be ten years off. In the nuclear regulatory world, ten years is pretty fast to get one of these facilities approved, built and operating. When it comes to SMRs 15 to 20 years seems more realistic.

I do understand the proponents need guidelines but do they need hard and fast and final regulations at this point?

Draft of preliminary status should be sufficient for now, what is the rush? This comment period for public review is much too short and should be extended for another 12 months. The draft version will still provide guidance to proponents to get prepared in their future application endeavors. I would like to see more stakeholders and interested parties included as well as environmental opinion leaders familiar with the nuclear world to weigh in on this regulatory approach. Efforts to engage the ENGO's is required.

What about some information on other international regulatory agencies on their regulations. That should have been part of a background package of information as part of this current Draft Regulatory public review currently underway until November 20, 2018.

A-2

This writer notes CNSC will consider alternatives approaches to the developments in its regulatory framework where one or more of the following conditions apply noted in #1 and #2

It is the comment under #3 that I would agree with "Where risk characteristic contains uncertainties, the amount of evidence required for the applicant to demonstrate a credible decision increases. The CNSC should include criteria in its regulations that alert the proponent application that no application will be received, recorded or considered. If you see an increased risk or have more uncertainties the message should be "There is no purpose in making an application that has known risks that may not be able to be mitigated or managed" written in regulatory framework.

Page 21 – under supplemental guidance letter

“May also provide information on the following applicability of an environmental assessment”. This should not be optional or discretionary but a firm regulatory requirement. This should not be optional regulatory requirement. If CNSC only accepts one of my recommendations please change the word “may” to “will” provide information on applicability of an environmental assessment. I do understand that such a decision would be driven by federal or provincial legislation. This should be explained better in the Draft Guideline under this public review.

This is fully supported and a needed requirement. If it is determined that the risks are just too great regulation should include a stop requirement until the proponent can submit an evidence based analysis on ways to mitigate or even prevent risks from these new nuclear units.

B.1 # 3 Page 21

It was my understanding that these SMRs would not produce radioactive waste but used recycle if you will currently store nuclear waste material already on existing waste management storage facilities.

Under purpose of the project, there should be section where the proponent clearly describes where the power from these units will be used. Such as power plants etc.

B 2.1.

Since we are dealing with a “novel” nuclear technology, openness to the public’s need to know is critically important. Therefore, should be more a through public notice and engagement activities with the public at these early pre licencing stages. I take exception to the use of the word “novel” in the regulatory framework. The word novel does not induce public confidence. I would recommend that this word be removed to more accurately reflect the newness of this technology for example: innovative.

This is an important recommendation in the interest of creating public confidence and acceptance provided the safe operations is demonstrated and accepted by the CNSC.

Activity B - Conduct risk assessment as document proposed strategy for novel nuclear technology - #3

The proponent or applicant should never be given the opportunity to make a recommendation on whether a licence is required under Section 26 (A-F) of the nuclear safety and control act. That is the level of responsibility of CNSC. The CNSC tells the applicant a licence is required or not. It should not be the other way around. I have strong objections to that section under #3 "this activity involves".

Activity D - Page 20

There needs to be a requirement/statement in this section that everything related to process is made public in an open and transparent manner. Register all applications/communications (including e-mails) on CNSC website under a special webpage reference. The draft regulation should explain that all communications are available in the public record. I did not see that requirement included in this foundation draft regulatory document.

Page 22 – Description of the nuclear facility or activity.

My question here is if one of these SMRs will be located on an existing nuclear site, will that make approval process and outcome any less rigorous?

That should not be the case no short cuts just because one of these units are to be sited on an existing nuclear facility such as Point Lepreau. Any overlap of regulatory requirements for these SMRs should be identified and referenced in other regulatory documents.

There needs to be a regulatory requirement that include sections to cover specific and dedicated areas of public and regulatory concerns. These include

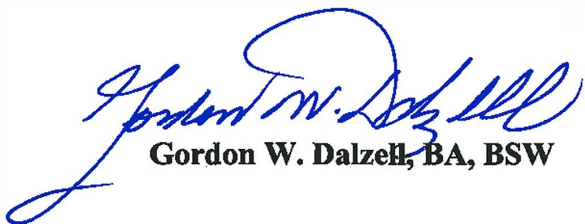
- (1) Coast analysis / overruns to be expected. All aspects of financial supports, subsidiaries

- (2) Status of other functional SMRs in the world with history of their tract records including safety incident or potential for such
- (3) A comparison analysis of the current heavy water type of facilities with these SMRs

This could be included in a regulatory requirement under public education, information, engagement and disclosure.

Please do not allow proponent to keep their information from the public domain under proprietary information thus shutting out the public's need to know.

Respectfully submitted,



Gordon W. Dalzell, BA, BSW