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Canadian Nuclear Safety Commission
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**Re: Comments on Comments – REGDOC-1.1.1, Licence to Prepare Site and Site
Evaluation for New Reactor Facilities**

Thank you for the opportunity to provide comments on the comments submitted to the CNSC in relation to the above noted RegDoc 1.1.1, Licence to Prepare Site and Site Evaluation for New Reactor Facilities. This submission will focus on the comments from Bruce Power to respond to the comments from industry, since several of the comments from nuclear power plant operators mirror each other, as well as on the topic of small modular reactors.

Response to the Bruce Power Comments

These are high level comments in response to the submissions from industry. Page numbers refer to the Bruce Power submission pdf numbers as posted (for example “page 5” in this submission refers to page 5/37 of the pdf document.

Page 5.

General. The assessment of the suitability of a site for a new nuclear power reactor is an important and distinct decision stage which requires thorough review of the potential impacts of operations and accidents on the surrounding environment and population. We repeat our comment regarding section 4.7 of the draft document;

Recommendation: The CNSC must apply its jurisdiction and expert judgment to the question of the suitability of a site in relation to the specific technology. The proponent should be required to specify specific technology when applying for a licence to prepare a site.

Page 6.

There should be no relaxing of requirements for assessment of the suitability of a site due to size of the reactor. Furthermore if the industry stated logic about size of the reactor applies, then larger reactors should have even more onerous requirements.

Page 7.

We would agree in general that vagueness of language is a problem. Each jurisdiction must fully meet its own review requirements; "redundancy" is not an issue for key safety decisions (see Walkerton Inquiry). Rather than consider prescription of requirements to be problematic, Canada should adopt more of the USNRC prescriptive requirements style in Canadian licensing standards.

Page 8.

The site will have to remain suitable for all subsequent licensing phases; therefore sufficient information is necessary to evaluate the likelihood that this will be the case. This is an issue that should be able to be determined with a high degree of certainty given the significance of this issue to the surrounding population. This is why detailed design info is needed - because such events and their implications for the site context is essential in determining whether the site is suitable.

Page 9.

To repeat, the site must remain suitable for the whole life cycle so this information should be retained and listed.

Page 12.

The licence to prepare a site should be required to be obtained first so that site suitability can be considered before any other licences are pursued (or at least in conjunction with them).

Page 13.

The section is appropriate as proposed as it reinforces the necessity at the stage of application to prepare a site for the regulator to consider the likely suitability of the site for all subsequent phases and licensing stages in the whole lifecycle of the facility. The continued suitability of the site throughout the life cycle of the nuclear reactor very much does need to be stated. There is currently no mechanism to re-evaluate site suitability during the operations phase and subsequent phases in licensing. However this should become an explicit requirement of every stage of licensing with criteria, and with potential rectification if the site becomes unsuitable according to the criteria, up to and including the potential for revocation of license to operate and orders relative to decommissioning.

Page 14.

The expected radioactive materials uses on the site during the license period should be specified and limited.

Page 16.

Demonstration of the adequacy of the dispersion model is an important requirement to retain. It is important to demonstrate to the adequacy of the exclusion boundary. Such determinations should be transparent to the public.

Page 18.

A description of the steps that will be taken throughout the lifecycle to protect environment and public should be included as relevant to the decision as to whether the site is suitable for a nuclear reactor.

Page 21.

Environmental assessment requires comparison of alternatives including alternative sites. Specification of “reactor facility events, including beyond-design-basis events and severe accidents” is highly relevant to evaluating the suitability of the site.

Page 22.

“Cliff edge effects” from external events are critical considerations relevant to the suitability of the site for nuclear power. As submitted in our original comments, we agree that criteria should be added.

Page 23.

Ability of the surrounding municipalities and first responders to respond to large nuclear accidents is a key factor in terms of site suitability for a nuclear reactor.

Page 29.

Thorough evaluation of potential impacts on water bodies from thermal impacts, impacts on biota, impacts of emissions, impacts of accidents, are all essential aspects of assessment of suitability of site for nuclear reactor.

Small Modular Reactors

A common theme from industry commentators is that the proposed guidance is unduly strict for theoretical Small Reactor (SMR) designs. Industry comments to this effect should be viewed with scepticism.

Industry recommends a graded approach based to enable the construction of SMRs, which they allege are less hazardous than operating reactors. There are two problems with industry's arguments in relation to the proposed RegDoc 1.1.1. Firstly, SMRs are theoretical designs, with the majority of designs only 5 to 10 % complete. Internal CNSC documents also acknowledge that the source term from SMRs could still be equivalent to existing designs. There are still significant risks to the environment and the public.

What's more, the high-level waste produced by SMRs was not included in the Nuclear Waste Management Organization's (NWMO) public consultation on waste management methods between 2002 and 2005. While current reactor operators have relied on the argument at the siting stage that waste will be dealt with by the NWMO, SMR developers will not be able to credibly rely on similar arguments. Site preparation studies will need to be much more thorough to assess the possibility that high-level waste remains at the site in the long-term. In our view, siting guidance should require a proponent to outline a non-theoretical waste management and decommissioning plan at the outset. This requires heightened siting requirements for SMRs.

Finally, while industry is today arguing for reduced siting requirements for SMRs they argued against imposing site-wide risks limits for new reactors during the development of RD-346 and 337 in the 2000s. At the time, they said such requirements would put multi-unit sites at a disadvantage (even though the hazard is higher). As we noted in our submission, the proposed siting requirements continue the industry's preferred practice of ignoring the risk of multi-unit, common cause accidents, when assessing site acceptability. To be logically consistent, requiring a graded approach for SMRs would by extension require increased rigour for multi-unit stations.

Thank you for the opportunity to submit these comments on the comments of others in this consultation process. We would be pleased to discuss our original comments and these comments on comments at any time.

Yours very truly,

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