

Preliminary advice on the use of a bounding approach

*Prepared by the Impact Assessment Agency of Canada
and the Canadian Nuclear Safety Commission*

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Context and Current Situation

For designated nuclear projects under the *Impact Assessment Act* (IAA), the Impact Assessment Agency of Canada (the Agency) and the Canadian Nuclear Safety Commission (CNSC) will conduct integrated assessments, in accordance with sections 43 and 51 of the IAA, and as outlined in the *Memorandum of Understanding on Integrated Impact Assessments Under the Impact Assessment Act Between the Impact Assessment Agency of Canada and the Canadian Nuclear Safety Commission* (the MOU). The Agency and the CNSC, as stated in their MOU, may provide early guidance on the regulatory process to proponents of nuclear projects that may undergo an integrated assessment.

The Agency and the CNSC have been asked to provide early advice on the potential that a project may be proposed using a “bounding approach”.

A “bounding approach” is understood as “a proponent advancing bounding scenarios, where a project description is submitted for a specific location, but rather than identifying a single type of reactor technology, the bounding approach identifies a set of design parameters and associated limiting values, such as a worst-case scenario, for all of the reactor technologies being considered.”

Darlington New Nuclear Project – ongoing review

The Agency and the CNSC note that Ontario Power Generation has used a bounding approach for the Darlington New Nuclear Project (DNNP). The CNSC is currently reviewing the matter of whether the chosen technology by OPG is consistent with the assumptions, conclusions and recommendations of the assessment. CNSC’s Commission has scheduled a hearing on January 24, 2024 pertaining to “[Ontario Power Generation - Applicability of the Darlington New Nuclear Project environmental assessment and plant parameter envelope to selected reactor technology](#)”. The outcome of the Commission’s decision following the hearing will need to be taken into consideration for any further advice the Agency and the CNSC provide to proponents on the use of a bounding approach.

The contents of this document are therefore preliminary and may be updated accordingly. This document and advice within it do not consist of a decision nor bind the Agency or the CNSC to any commitment towards any proponent.

Observations and Considerations

Based on best available information, the Agency and the CNSC share the understanding that the selection of the bounding approach is a choice of methodology that can be used for the assessment. It does not preclude a proponent from submitting a project for review under the IAA and for a Licence to Prepare Site under the *Nuclear Safety and Control Act* (NSCA). However, the use of a bounding approach can complicate an assessment, and therefore must be done in a way that accounts for the potential impacts of all options identified, irrespective of which option is eventually chosen.

Proponents should consider the following criteria when choosing to use a bounding approach:

- There must be sufficient detail in the assessment to:
 - meet the requirements of the IAA (e.g.: provide evidence to support decision-making; give consideration and analysis for factors in section 22; be based on science and Indigenous knowledge);
 - meet the requirements of the applicable REGDOCs and the NSCA;
 - allow participants to challenge assumptions, test the evidence and identify gaps in the analysis;
 - provide clear measures for the management of uncertainties; and
 - proceed to a hearing, according to the review panel, based on meeting the mandate set in their Terms of Reference.
- It is supported by information on the record for the assessment.
- It allows for the development of appropriate mitigation measures.
- It allows for effective public and Indigenous participation.

The Tailored Impact Statement Guidelines (TISG) outline information requirements, while providing the proponent with flexibility in selecting methods to compile and analyze data for the impact statement. Consequently, the Agency and the CNSC can structure the TISG to reflect that a bounding approach will be used. The TISG would emphasize the need to provide sufficient information to allow for a transparent, robust and thorough assessment of the effects of a project and proposed mitigation measures to inform the development of conditions. Proponents are reminded that requirements would apply for planned project activities for construction, operation and decommissioning phases, for all options.

Additionally, the integrated review panel's Terms of Reference (TOR) could provide additional direction about the bounding approach, so that the review panel can fulfill its duties in a manner consistent with the IAA. For example, the TOR could emphasize the need to have sufficient detail required to facilitate meaningful participation in the assessment. The degree to which details would be deemed sufficient would depend on the particular project and the context and issues that define it. That decision ultimately rests with the review panel, and it must be made in a manner considered reasonable and documented in their report (i.e. justified, based on logic, and rational). If a review panel decides the information is insufficient, it can seek further information from the proponent.

CNSC regulatory guidance

With respect to the Licence to Prepare Site application, a bounding approach may be used within the existing CNSC regulatory framework. However, it is important to note that the licence and corresponding Licence Conditions Handbook will restrict activities to those that are technology neutral, through licence condition hold points. Once a technology has been selected, assessed and any hold points are removed, technology-specific site preparation activities may be permitted.

Applications for a licence to prepare a site that are submitted without the selection of a specific facility technology should ensure that the bounding parameters encompass all technologies under consideration. In this case, the application should include all design information that is necessary to support proposed site preparation activities (for example, plant footprint excavation, and excavation of cooling water intake tunnels). REGDOC 1.1.1 provides additional guidance on this matter.

Additional operational considerations

The Agency and the CNSC also identified that there could be potential impacts to cost and timelines as a result of the use of a bounding approach. During the planning phase, it will be important for the Agency and the CNSC to better understand how participation and information reviews may be impacted by the use of a bounding approach, which is expected to be unique to the specific project. Comments received during the planning phase will inform the Agency and the CNSC on their budgeting for funding envelopes, cost estimates, and duration for the subsequent phases of the assessment to ensure meaningful participation, and the conduct of a robust and thorough assessment. These comments will be those received from all participants on the initial Project Description, the TISG, and the Public Participation Plan, as well as comments from Indigenous groups on the Indigenous Engagement and Partnership Plan(s).

Outstanding questions noted for proponents to consider, and that the Agency and the CNSC will continue to explore, include:

- The integrated assessment process presents an opportunity for the proponent to gain efficiency by submitting information required for subsequent permits and authorizations. The level of detail available for a bounding approach may not be sufficient to advance permits and authorizations by other regulators.
- The bounding approach may present challenges with regards to meaningful consultation and engagement with Indigenous groups, particularly on conditions. Proponents are encouraged to share updates with the Agency and the CNSC, if possible, about what they hear from Indigenous groups on the use of the bounding approach during Indigenous engagement activities.

Conclusion

In conclusion, the Agency and the CNSC can accept a bounding approach in an Initial Project Description and to initiate the Planning Phase. However, the Agency and the CNSC note that the use of a bounding approach will be more complex than if a preferred technology was chosen.

In order for the Agency and the CNSC to conduct meaningful engagement in the planning phase, to adequately plan for the integrated assessment, and to best understand the use of a bounding approach, we recommend that proponents, in their initial Project Description:

- Provide a justification for not choosing a preferred technology at the outset (i.e. what does the proponent stand to gain or lose by this approach), as opposed to selecting a preferred technology and exploring other options via an alternative means assessment.
- Indicate whether it is possible that the final choice of technology will be made at a future point in time, such that baseline conditions and project components may change substantially from what will be included in the Impact Statement.
- Describe the pathways of effects for each technology and differences among them in the Impact Statement, for project activities including during construction, operation, and decommissioning. This would include pathway of effects on the environment, on health, social, cultural and economic conditions, as well as impacts on Indigenous Peoples and on their rights.
- Consider narrowing the envelope to the most plausible choices of technology to reduce the quantity of information that will need to be reviewed.

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- Explain whether the IA process is going to be used to inform the selection of the technology, and if that choice or narrowing it down further would be made during the process (ideally in the Impact Statement), or following the IA decision (as part of the Licence to Construct application).
- Inform the Agency and the CNSC of the feedback of engaged participants, especially Indigenous groups, with regards to their views on the use of a bounding approach for the IA.

Note: The advice contained herein may need to be updated in the future to elaborate on outstanding questions, and to reflect new information on this matter as it becomes available. The final Tailored Impact Statement Guidelines would contain specific requirements on the level of detail and confidence that the proponent is expected to demonstrate to justify the use of a bounding assessment.