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10 Years of Continued Progress

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**Re: Environmental Assessment of Seitel's East Coast Offshore
Seismic Program, 2016-2025 Addendum**

Dear Mr. Hicks,

Please find below our comments with respect to of Seitel's East Coast Offshore Seismic Program, 2016-2025 EA Addendum, submitted for review to the Nunatsiavut Government by the C-NLOPB on August 9, 2016.

The Nunatsiavut Government (NG) finds that responses to both the general and specific comments to be lacking in substance. The NG response below reiterates and clarifies some of our comments, including outlining some of the original questions in our initial EA response letter.

There are two major issues identified in this response. First, the NG finds it important to note the lack of ability to assess long-term cumulative effects, and encourages the C-NLOPB to move to annual or bi-annual EA reviews instead of updates. If proponents are unable to assess impacts for the period they have chosen for their project, the timeline should be minimized until they are able to assess cumulative effects. Second, an environmental effects monitoring plan is an essential part of any environmental assessment (see Table 3 in Duiker et al., 2012), and should be required in the EA process, especially for longer term EAs.

General Comment 1

These comments were raised to bring forth the lack of impetus to improve mitigation once a 10- year authorization was approved. It was not answered.

Question 1 – *Specifically*, how will new technology and mitigation practices be assessed? On an annual basis? Through literature searches?

General Comment 2

The proponent has focused on the emissions caused by their own project, however climate change should also be assessed based on the changes to the marine environment and by the cumulative effects of other foreseeable projects. The evaluation of cumulative effects involves evaluating the past, present, and future impacts of the project (CEAA, 2012, Ross, 1998) not evaluating the cumulative impacts on an annual basis.

Question 2 - Please provide the precedent or reference for the practice of assessing cumulative effects on an annual basis (outside of the C-NLOPB or the C-NSOPB). Also, please discuss how changes to the marine environment and other future projects will be incorporated into a cumulative effects assessment.

NG Comment – The NG reiterates its prior comment:

“As an extension of the above, the amendment fails to properly address cumulative impacts. Proper cumulative impact assessments are required to fully assess the additive or multiplicative effects of *potential* projects. Therefore, forgoing assessment with the reasoning that the number of active projects is unknown, as stated on page 13 of the Amendment is unacceptable EA practice. The proponent should clearly state and assess the maximum number of potential projects within the extended temporal scope of their program. Although the NG prefers EAs with annual or bi-annual timelines, the annual EA Update process should only be used to update a robust cumulative impact assessment as more concrete information becomes available.”

General Comment 3

Since the proponent has stated that for them it is “not possible to realistically consider cumulative effects for the entire 10-year period,” it is the opinion of the NG that this project enter an annual or bi-annual review of the EA for the 10 year period.

However, it is possible to assess long-term cumulative effects based on the estimates of their own activities provided by the proponent (either 2D&2D or 2D&3D each year) in their project description and the list of known proponents and their activities on the C-NLOPB website.

More documentation and guidance is available for cumulative effects assessment than is referenced in the proponent’s response. Duiker et al. (2012) is a valuable review on the state of CEA guidance, however further work has emerged, specifically with reference to the Canadian Environmental Assessment Act of 2012. For example, the Technical Guidance for Assessing Cumulative Environmental Effects under the Canadian Environmental Assessment Act, 2012 provides specific examples of setting past and future temporal boundaries, among other references to methodology. Duiker et al. (2012) also provides clear steps towards improved CEA, such as the use of GIS to map long-term planning for large areas. It may also be of assistance to review the cumulative effects assessments of projects that have a similar timeframe and have been able to perform a cumulative effects assessment (i.e. mines, pipelines, etc.).

Bidstrup et al., (2016), Noble, (2015) and Duiker et al. (2012) all emphasize the importance of Strategic Environmental Assessment to the assessment of cumulative effects. The Technical Guidance for CEA Effects under the CEAA 2012 also states that “Mitigation, monitoring and effects management

are recommended (e.g., as part of an Environmental Protection Plan). These measures may also be required at a regional scale (possibly requiring the involvement of other stakeholders) to address broader concerns regarding effects on VECs.”

Monitoring programs from project-based EAs are therefore an important contributor to the strengthening of Strategic Environmental Assessments as well as to assessing project-based cumulative effects.

Question 3: Without a monitoring program *at least* based within their own project, how will the proponent assess total project effects and overall cumulative effects? How will the project impacts to SARA species be monitored and assessed against the EA’s impact predictions?

General Comment 4

The proponent’s answer did not acknowledge the question. It has been repeated in Question 4.

Question 4: Section 5.8.3 should *detail the references and studies* used to conclude that “any cumulative effects... will be additive (not multiplicative or synergistic) and predicted to be not significant.” Please provide these references.

General Comment 7

The definition of environmental assessment as per the Canadian Environmental Assessment Agency includes “a follow-up program to verify the accuracy of the environmental assessment and the effectiveness of the mitigation measures” (CEAA 2016). Monitoring plans are a very common component of an EA’s Environmental Protection Plan, especially when species at risk are present. Therefore, a monitoring program can and should be applied to this project. Sound source verification, marine mammal observers, and environmental monitors are common practice within seismic activities in North America.

General Comments 9 and 10

The exposure criteria for DFO Western Arctic and DFO Pacific (clearly not nationally set criteria) were determined through Southall et al., 2007 and through the application of evolving mitigation based on environmental assessment monitoring plans. The academic studies of temporary threshold shift (TTS) and disturbance in marine mammals has evolved to assess specific groups and species. For example, Tougaard, Wright, and Madsen (2015) found even lower TTS thresholds for smaller odontocete species at 100dB. The NG recommends the use of these types of studies within the EA.

With regards to SARA species, it is important to feed information both to a monitoring plan for the proponent, but also to the strategic environmental assessment of the area. It is important to reiterate that the 500m safety zone is a minimum requirement, and that the Statement of Canadian Practice with respect to the Mitigation of Seismic Sound in the Marine Environment encourages updates to mitigation with new scientific information. The Statement’s supporting document is from 2004 and cites major gaps in knowledge regarding offshore SARA species.

Question 5: The NG requests that the proponent outline the work on TTS and disturbance criteria since 2004 and justify (with references) why the 500m radius remains adequate in their opinion.

The reasoning that the sound source verification is not necessary because it was not included in the scoping document is not consistent with the proponent's statement in Comment 1 that they will evaluate how they can improve mitigation and the incorporation of new techniques each year. *The NG reiterates the risk of a 10-year approval and the resulting ineffectiveness of the Board to encourage more recent best practices; especially if the proponent is unwilling to research and establish new practices themselves.*

Specific Comment 4 from C-NLOPB

The shifting of the gun size from a maximum of 6000 in³ to 8000 in³ is significant and should be reassessed within the EA.

Specific Comment 5 from NG

The proponent states that 500m will be the minimum standard for a safety zone shut down.

Question 6: What other standards will be used for other situations? Will they be applied to high-probability habitat? A monitoring plan could assess the amount of time spent in high probability habitat in low visibility and aid in future planning to decrease potential impacts.

Thank you,

[Redacted]

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Director of Non-Renewable Resources
Nunatsiavut Government

References

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