

Environmental Stewardship Branch
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File No.: 4194-37/H135-5

Ms. Kim Coady
Canada Newfoundland Offshore Petroleum Board
Fifth Floor, TD Place
140 Water Street
St. John's, NF A1C 6H6

Dear Ms. Coady:

**RE: Husky Drill Centre Construction & Operations Program, EAS 2006-031C
Environmental Assessment Report Addendum**

As requested in your letter of January 18, 2006, Environment Canada (EC) has reviewed the environmental assessment report addendum for the above-noted project. EC comments in review of this report were provided in October 2006 and the addendum is intended to address those and the comments of others. This letter will address the adequacy of the response to EC comments.

The EC review is founded on the department's mandate under the *Migratory Birds Convention Act* (MBCA) and Section 36 of the *Fisheries Act*. Pertinent EC expertise also originates with the *Canadian Environmental Protection Act* (CEPA), the *Canadian Wildlife Act*, the *Species at Risk Act* and the *Department of the Environment Act*.

POLLUTION PREVENTION AND CONTROL

Chemical Management

The *Offshore Wastewater Treatment Guidelines* (OWTG) state that the *Offshore Chemical Selection Guidelines* (OCSG), contain "a suggested management system to assist in [the] process" of ensuring chemicals used are the most environmentally appropriate and that "a chemical that 'passes' [the OCSG] process is not necessarily automatically accepted for discharge" (p. 3). In the OCSG, linkages are made to the evaluation and control of substances under the *Canadian Environmental Protection Act* (CEPA). As it stands, the OCSG do not reflect the most recent information and guidance published under the authority of CEPA.

At this stage, Environment Canada can draw attention to the recently announced categorization process, which is likely to result in the implementation of specific risk management actions under CEPA in future. This initiative is described at <http://www.chemicalsubstanceschimiques.gc.ca/en/index.html>.

In co-operation with industry and health and environmental groups, Government of Canada scientists have categorized the 23,000 substances on the Domestic Substances List under CEPA into high, medium and low priorities for further work. Approximately 4,300 chemicals were identified for further evaluation and/or management. Various processes are now in place to further define the risks associated with these chemicals including the following:

- An industry challenge program for the high priority chemicals (approximately 200). The federal

government will be publishing, in batches of 15-30 substances every three months, a profile of these substances for industry and other stakeholders to provide any additional information in their possession. All challenge substances will be assessed within 3 years. Industry will have six months to comment on the profiles and provide requested information. The first batch of chemicals has been published in the *Canada Gazette* Part 1 at <http://canadagazette.gc.ca/part1/2007/20070203/html/notice-e.html#i2>

- Medium priority chemicals (approximately 2,600) will be subject to standard risk assessment over the next 13 years
- Low priority substances (approximately 1,200) will be subject to a rapid screening over the next year
- Government will review the information provided through the various assessment processes and decide what actions are to be taken through an expedited application of CEPA. Risk management actions for all substances will be implemented in accordance with the CEPA process.

The applicability of CEPA information and guidance hinges on identity of the substances to be used for the project as a whole including the proposed expansion. As a mitigation measure for the proposed project, the proponent is required to work with the Canada-Newfoundland and Labrador Offshore Petroleum Board (CNLOPB) and Environment Canada in revising the chemical management plan for an expanded White Rose development. The revised plan must reflect a consideration of the best available information and guidance, including that published under CEPA, so as to help ensure the most environmentally appropriate substances are selected and used as per the OWTG.

Section 3.9.8.1 Cooling Water

The proponent response indicates that the requested information is available in its report to the CNLOPB titled *Condition 36: Cooling water Discharge*. Please provide a copy of this report to EC for information.

Section 7.6.1.7 Atmospheric Emissions

The proponent response is not completely adequate. For greater clarity and certainty, the proponent should provide the following:

- emission estimates for SO₂, NO_x, H₂S, PM, PM_{2.5}, PM₁₀, and VOCs according to source.

Winds and Waves

Comments on White Rose Drill Centre – Addendum and Proponent's Responses, Including Appendix 3: Climate of the Husky New Drill Centre, by Oceans Ltd, December 2006

Relating to Earlier EC Comments Number 26 (Concerning Effects of the Environment on the Project) and Comments 27, 30, 31, 32, and 33 (Concerning the Wind and Wave Climatology and Wind and Wave Extremal Analysis)

Comment 26 is responded to in Chapter 4.

Comments 27, 30, 31, 32, and 33 are responded to in a new document contained in Appendix 3: Climate of the Husky New Drill Centre, by Oceans Ltd. December 2006.

The information contained in Appendix 3 goes a long way toward meeting the recommendations in the comments.

One of the recommendations was to include analyses of the relatively long record of platform meteorological data (especially wind) and wave measurements on the Northern Grand Banks since the 1980s, which became nearly continuous (on a 3-hourly reporting basis) in 1997 (see Comment 30). Hibernia started regular observations by 1998 and observations began at the Terra Nova site in 1999. However this recommendation was only partly followed: the Appendix included 3-hourly data from the White Rose site, from 2003 to 2006. The value of the analysis would have been much improved with the extension of the record backward in time through use of the Terra Nova and Hibernia platform data, with appropriate adjustments for winds. This seems particularly important for winds, as the AES40 analyzed winds generally used are for one-hour mean winds at 10 metres, while platform winds are for higher heights and averaging intervals of one minute (for aviation) and 10 minutes (for marine reports). As pointed out in the Appendix also, there can be greater uncertainty in adjusting the winds from high platform anemometer heights to 10 metres in stable flow regimes. This supports the need for the additional analysis of those platform winds.

For the comparisons of AES40 winds and waves to platform wind and waverider waves, in order to make meaningful statements about bias, it would have been better to show comparisons of data covering the same period of time. We can't conclude from just one data point value that the AES40 wave heights are biased low, as might be suggested by the example of the 2003 Feb 11-12 storm. Comparison of the monthly mean values in Table 15 suggests that at least for the bulk of the observations the AES40 wave dataset is not biased low.

Recommend that future work developing wind and wave climatology make better use of the full record of wind and wave measurements near the site, including those from Hibernia and Terra Nova. In addition, remotely sensed QuikScat winds will be useful for comparison with height-adjusted platform winds (Cardone et al. 2004).

Recommend that future descriptions of the climate include a separate description of extra-tropical storms and extreme events, in a similar way to the separation of tropical cyclones in the Appendix.

It was recommended that any analyses of platform winds make appropriate adjustments for anemometer height, to make them equivalent to a reference height such as 10 metres. This was not done. The anemometer height (presumably of the semi-submersible platform the GSF Grand Banks) was given (82.5 m) and the difference in height was given as a reason for departures from the AES40 (which remained even after adjusting peak values of one-hour mean winds to be equivalent to peak values of 10-minute mean winds). Although there are uncertainties in height adjustment methods, these can be reduced by use of platform temperature measurements. Recommended height and averaging method adjustments for offshore platforms are described in international standard ISO 19901-1, "Petroleum and natural gas industries - Specific requirements for offshore structures — Part 1: Metocean design and operating conditions". Any further analysis should make these height adjustments to facilitate comparison with winds at a different level. [Note it is not appropriate to adjust (for averaging interval) the monthly mean values of one-hour means to make them equivalent to monthly means of 10-minute mean. The adjustment relates to peak values of a particular averaging interval.]

Further work in developing a wave climatology for the area would be enhanced by use of the MSC50 as it becomes available and replaces the AES40 (Swail et al, 2006).

Comment 27 recommended study of atmospheric circulation patterns and the relationship to the marine climate over the Grand Banks. This was presented in Section 7 of the Appendix "Interannual Variability and Short-Term Climate Trends". The results are interesting and show some relationship

between increasing North Atlantic Oscillation indices and increasing winds and waves over the site over the past few decades. Further work could also examine the Pacific North America Pattern as this is more closely related to the El Nino Southern Oscillation and tropical cyclone frequency. There do appear to be at least short term increasing trends in winds and waves in summer and winter. Trends in long time series data will affect the results of extremal analysis. The issue of climate change and extremes will be considered in an upcoming workshop organized by the Oil and Gas Producers Metocean Committee on 28th March 2007 (see <http://info.ogp.org.uk/metocean/>). In future studies of this site, as the design process for the project continues, the authors may wish to consider the work of Anderson et al. (2001) which describes a method for extreme value analysis for data that may contain trends. This method uses the peaks-over-threshold method and the Generalized Pareto Distribution, rather than the Weibull distribution chosen here.

References

Anderson CW, Carter DJT, Cotton PD, 2001, Report on Wave Climate Variability and the Impact on Extreme Values, prepared for Shell International, 88 pages. Online at: http://info.ogp.org.uk/metocean/JIPweek/WCEReport_2sided.pdf

Cardone V.J., A.T. Cox, E.L. Harris, E.A. Orelup, M.J. Parsons and H.C. Graber. [Impact of QuikSCAT Surface Marine Winds on Wave Hindcasting](#). 8th International Wind and Wave Workshop, Oahu, Hawaii November 14-19, 2004.

ISO 19901-1 "Petroleum and natural gas industries - Specific requirements for offshore structures — Part 1: Metocean design and operating conditions". (More information online at: <http://www.galbraithconsulting.co.uk/iso/index.htm>)

Swail, V.R., V.J. Cardone, M. Ferguson, D.J. Gummer, E.L. Harris, E.A. Orelup and A.T. Cox, 2006 [The MSC50 Wind and Wave Reanalysis](#). 9th International Wind and Wave Workshop, September 25-29, 2006, Victoria, B.C.

Sea Ice and Icebergs - Canadian Ice Service

Comment No. 1

This was not a CIS comment. The section on sea ice and icebergs has been updated to include data up to 2006 as requested. However, I don't have section 8.1 and I cannot tell if the requested update to accidental events and spills has been provided.

Comment No. 28

This was not a CIS comment. The requested information on iceberg scours and sediments is still not provided.

Comment No. 34

There may have been some misunderstanding for this one. The initial comment was for clarification of the statement about the frequency of presence of sea ice at the site and the exact range of years implied when referring to "the last 10 years" in the iceberg section. The proponent has now provided an analysis of sea ice and icebergs for the period 1997-2006 (last 10 years) and this has replaced the previous information. I think the information that was removed should be reintroduced as climate information and the new analysis for the period 1997-2006 should highlight any changes to the climatology in the last 10 years (1997-2006).

Comment No. 35

Again we were asking for clarifications on the meaning of a statement on ice thickness. The proponent's reply was to remove the sentence as well as the whole section and replace it with this

basic analysis on the presence of sea ice for the period 1997-2006. Again I would like the previous section to be reintroduced and clarified. The new section refers to a mean concentration of 4.3; this does not represent a real ice occurrence and we usually prefer to use a median.

Comment No. 103

Not a CIS comment. The reference to Appendix 1 for detailed discussion of pack ice distribution has been removed and several other paragraphs also removed.

I trust that this information will be of assistance in your review of this proposal. If you wish to discuss these comments or have further questions, please do not hesitate to contact me at your convenience.

Yours truly,

Original Signed by Glenn Troke

Glenn Troke
Environmental Assessment Coordinator
Environmental Protection Operations Directorate - Atlantic.

Attachment

cc K. Power
B. Jeffrey