

Environmental Stewardship Branch
6 Bruce Street
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May 14, 2007

File No.: 4194-10

Ms. Elizabeth Young
Canada Newfoundland and Labrador Offshore Petroleum Board
Fifth Floor, TD Place
140 Water Street
St. John's, NF A1C 6H6

Dear Ms. Young:

RE: StatoilHydro Exploration and Appraisal/Delineation Drilling Program for Offshore Newfoundland, 2008-2016 EA EAS 2007-252B

As requested in your letter of March 31, 2008, Environment Canada has reviewed the environmental assessment of the above noted drilling program offshore Newfoundland in the Jeanne D'Arc Basin. Based on the information provided, it is understood that the proponent proposes to drill up to 27 exploration and appraisal/delineation wells during the period 2008-2016.

The following EC comments stem from the department's mandate under the *Migratory Birds Convention Act* (MBCA) and Section 36 of the *Fisheries Act*. Pertinent EC expertise, and related comments, also originate with the *Canadian Environmental Protection Act* (CEPA), the *Canadian Wildlife Act*, and the *Species at Risk Act* as well as *Department of the Environment Act*.

REVIEW COMMENTS

Section 5.4.1 Seasonal Abundance of Seabirds in the Study Area

In the first paragraph on page 133, it is stated that there are increased bird numbers along the continental shelf edge from July to September, however Figure 5.49 does not support this conclusion. There is an increasing pattern of effort from July to September, but comparisons between blocks for which there is both summer and winter data, for example, shows similar patterns of abundance along the shelf edge.

In the first paragraph on page 136, the first letter of each word should be capitalized when spelling Programme Intégré de Recherches sur les Oiseaux Pélagiques out in full.

Section 5.7.1.6 Ivory Gull

It should be noted in this section that the Ivory Gull is listed as a species of special concern on SARA's schedule 1. However, as noted, COSEWIC has recently assessed the Ivory Gull as endangered. In the case that the Ivory Gull is uplisted to endangered on SARA's schedule 1 during the construction or operation of the proposed new drill center, the regulations associated with the Species at Risk Act (SARA) must be applied.

Section 7.2.2.4 Residual Effects on Seabirds

In the second paragraph of this section, it may be appropriate to mention that the recommended mitigation measures for stranded Storm-petrels are contained in the document by Williams and Chardine entitled, The Leach's Storm Petrel: General Information and Handling Instructions. Proponents should be aware that a permit is required from the CWS to implement this protocol.

Section 7.2.2.1 Fish Habitat

Here and elsewhere the assessment makes appropriate use of the EEM data available from the White Rose EEMP. However, the discussion is focused on the distribution of chemical tracers found in sediments as indicators of the spatial extent of effects, whereas the EEMP also examines the effects of drilling activity on benthic fauna. Given that the fish habitat VEC includes benthos it would be useful for the report to also summarize the results of drilling activity on benthic community structure. Similarly it might be suitable to summarize the results of taint testing under the Fisheries VEC and fish health indicators under the Fish VEC.

In general the application of relevant EEM data to the EA analysis is applauded and proponents are encouraged to make greater use of these programs in support of impact predictions.

Description of the Physical Environment and Effects on the Project

Use of the MSC50 wind and wave hindcast dataset is appropriate for climate analysis, but it would be of considerable value to augment the study with analysis of historical wave measurements and adjusted wind measurements from platforms in the area. The analysis of the MSC50 winds and waves was well done and included adjustment of peak winds to different averaging intervals. Winds from the ICOADS dataset of platform and ship reports were analyzed as well. However there was no attempt to present the platform wind measurements separately, so the dataset is rather inhomogeneous and the error estimates of all calculated values would be higher. Monthly mean wind speed maps from the Quikscat dataset were presented as well, which is useful. However the maps do not give any information about extreme conditions, which are most important for assessment of risk and operational planning.

- a. It is recommended that the platform wind measurements are analyzed separately, adjusting the winds to a common reference height. The platform wind data are relatively continuous in ICOADS since about 1990. This would improve the value of the wind climatology, particularly for extremes. The peak sustained wind speeds from the platforms are frequently stronger than hindcast winds, even after adjustment to a common reference height and averaging interval. There is some uncertainty inherent in the wind adjustment method, particularly in unstable or stable boundary layer conditions, however not doing the adjustment results in a large systematic bias between platform winds and winds at 10 metres. Results of the height adjustment can be validated against QuikScat winds (e.g. Cardone et al 2004).
- b. It is recommended that the description of the wave climate be augmented by analysis of wave measurements on the Northern Grand Banks. There is now a relatively long and relatively continuous record of wave height and period from wave buoys and radars used by platforms in the Northern Grand Banks since about 1980. These wave data are available from Fisheries and Oceans Canada Integrated Science Data Management (ISDM) division (formally MEDS).
- c. This analysis of instrumental wave data would be useful for the joint frequency distributions of height and period, which were presented based on the MSC50 hindcast data. The hindcast of

peak wave period tends to be biased slightly low. Wave period is an important parameter for floating platforms - most likely to be used in this project - since the platform response to the waves is sensitive to the wave period.

The Oceans study used as background for the EA presents interesting results on climate variability. This is important to consider given the project would span nearly a decade. It should be noted that Wang and Swail (2002) found increases in summer and fall to early winter (Dec) AES40 wave heights in the area of interest. Since the MSC50 replaces the AES40 with a number of improvements, the proponent may wish to consider monthly or seasonal trend analyses based on the MSC50 dataset.

It is recommended that the EA include consideration of freezing spray and precipitation, which causes ice to build up on the superstructure. There is a brief reference to ice accretion in the effects of the environment on the project but no information about frequencies or severity. It has been assessed to some degree in earlier EAs for the area using modelling studies. It may be possible to access industry archives of ice accretion monitoring data, to better understand the frequency and severity of ice accretion events and their effect on particular types of platforms.

It is recommended that the EA also consider the frequency of low cloud ceilings (in addition to the visibility statistics presented) as these both have a major impact on helicopter operations. The description of Effects of the Environment on the Project would be improved by a more thorough consideration of the effects of the various hazardous elements, specific for each type of platform under consideration. For example, the platform most likely to be used is an anchored semi-submersible, which requires longer lead times than a dynamically-positioned platform to move off station in event of particular extreme event. This information would be valuable for assessment of the contribution of the marine climate to the probability of accidental events. Also, poor marine conditions complicate the response to an accidental event.

References

Cardone AT, Harris EL, Orelup EA, Parsons MJ, and Graber HC. 2004. Impact of QuikSCAT Surface Marine Winds on Wave Hindcasting. *8th International Workshop on Wind and Wave Hindcasting and Forecasting*, Hawaii, Nov. 14-18, 2004. [<http://www.waveworkshop.org/8thWaves/Papers/F1.pdf>]

Wang, X.L. and Swail, V.R., 2002. Trends of Atlantic Wave Extremes as Simulated in a 40-Yr Wave Hindcast Using Kinematically Reanalyzed Wind Fields, *Journal of Climate*, 15, pp. 1020-1035.

General Comments

Monitoring

CWS has developed a pelagic seabird monitoring protocol that we are recommending for all offshore oil and gas projects. These protocols are a work in progress and we would appreciate feedback from the observers using them in the field. A guide sheet to the pelagic seabirds of Atlantic Canada is also available through CWS in Mount Pearl.

A report of the seabird monitoring program, together with any recommended changes, is to be submitted to CWS upon completion of the proposed project.

Oil Spills

Even small spills of oil can have very serious effects on migratory birds. Therefore, every effort should be taken to ensure that no oil spills occur in the area. The proponent should ensure that all precautions are taken by the contractors to prevent fuel leaks from equipment, and that a contingency plan in case of oil spills is prepared. Furthermore, the proponents should ensure that

contractors are aware that *section 5.1* of the *Migratory Birds Convention Act* prohibits persons from depositing harmful substances in waters or areas frequented by migratory birds.

Species at Risk

The Responsible Authority should be reminded that the Species at Risk Act (SARA) amends the definition of “environmental effect” in subsection 2(1) of the Canadian Environmental Assessment Act (CEAA) to clarify, for greater certainty, that EAs must always consider impacts on a listed wildlife species, its critical habitat or the residences of individuals of that species.

SARA also requires that the person responsible for a federal EA must, without delay, notify the competent minister(s) in writing if the project being assessed is likely to affect a listed wildlife species or its critical habitat. Notification is required for all effects, including adverse and beneficial effects, and the requirement to notify is independent of the significance of the likely effect. The person must also identify adverse effects of the project on listed species and their critical habitat. And if the project is implemented, the person must ensure that measures are taken to avoid or lessen adverse effects and that effects are monitored. Mitigation measures must be consistent with recovery strategies and action plans for the species.

The complete text of SARA, including prohibitions, is available at www.sararegistry.gc.ca. For guidance on SARA and EA, the proponents may wish to make use of the *Environmental Assessment Best Practice Guide for Wildlife at Risk in Canada* available at: http://www.sararegistry.gc.ca/virtual_sara/files/policies/EA%20Best%20Practices%202004.pdf

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
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Attachment

cc K. Power
S. Zwicker