

MEMORANDUM

Date: August 10, 2010

TO: Paul Rideout
Environmental Scientist
Environmental Assessment Division

FROM: Patrick Shea
Senior Environmental Scientist

SUBJECT: Hebron Project – Comprehensive Study Report June 2010

I have taken the opportunity to review the report entitled: Hebron Project – Comprehensive Study Report June 2010. The following are general comments related to the nearshore portion of the Hebron Project. Some comments are also included in regard to the report entitled: Air Emissions and Dispersion Modelling Study.

GENERAL COMMENTS

The following comments relate to the regulatory mandate of ENVC and the Pollution Prevention Division, Waste Management Section.

- Operations in the nearshore and marine environment will be regulated by the Canada-Newfoundland and Labrador Offshore Petroleum Board and the Federal Government.
- As stated in the report, land-based activities in Bull Arm will comply with provincial legislation. The Department of Environment and Conservation (ENVC) requires an Environmental Protection Plan for the Bull Arm site. ENVC looks forward to assessing this plan as well as the following supporting documentation. The following documents were referenced in the Comprehensive Study Report.
 - Waste Management Plan
 - Oil Spill Response Plan
 - Community Liaison Plan
- While the EPP and other documents will require more detailed assessment, it is noted that the Bull Arm Fabrication Site was utilized for similar construction purposes in the past. Therefore, the environmental footprint of the Hebron Project is not expected to be significant from a nearshore / land-based perspective.
- It is encouraged that an oil spill response plan considers waste management issues and coastal zone impacts.
- The nearshore spill modelling scenario refers to a diesel spill between 500 – 5000 gallons. It is agreed that the majority of modelling scenarios would result in spilled diesel remaining in the Bull Arm area. Diesel is a light end hydrocarbon and it is agreeable that impacts would be localized in nature.
- The maximum impact that would result from an accidental event would be a spill of crude oil that reaches the coastline. Even in the offshore, a major spill of crude could eventually reach shorelines of NL. Once oil contaminates the shoreline, the magnitude of impacts and volumes of oily waste are significantly increased.

COMMENTS ON AIR EMISSIONS AND DISPERSION MODELLING

- The use of AERMOD versus CALPUFF. CALPUFF is more suited for modeling of long range transport and has been proven to work very well in the near field and nearshore environments. AERMOD is supposed to be good out to 50 kilometers, but given the size of the domain (100 km x 65 km), AERMOD is stretching the limits of acceptability. It has been found that CALPUFF is the more accurate of the two models.
- The surface meteorological data is taken from both Hibernia and St. John's by incorporating a "linear interpolation". The use of such a method would result in inaccuracies in model outputs. It implies that not all the hourly data required for input into AERMET is available. Please clarify if all the parameters needed to run AERMET are available from Hibernia (ceiling height and cloud cover in particular)? If not, how are they accounted for in the model description? Given these uncertainties, a recommended approach is to use output from a meteorological model such as NAM or GEM as the input into the dispersion model.
- There is a possible error in the document. The model describes receptors which are located at the same location as the emission sources (e.g., Hibernia, Terra Nova and White Rose). Please clarify how this arrangement can provide accurate data or if this is an editing error.
- The NO₂ / NO / NO_x reduction methods were discussed but it never said which option was used. Please provide the option chosen so that modeling results can be put into perspective.
- It is mentioned that the BPIP program was used to calculate effects of building downwash for "particulate sources". Does this mean that the downwash was not considered for gaseous emissions? Also, BPIP is very sensitive to how inputs are entered. With the limited information provided, it cannot be determined whether BPIP will run accurately.
- For particulate, only TSP was considered in the model. There is no mention of PM_{2.5} which is a primary particulate fraction of concern.
- There is minimal supporting information provided to validate the conclusions. The results indicate concentrations close to the provincial limits. It should be noted that if emissions exceed 50% of provincial limits, that the province could take action to request more detailed information or engage in monitoring of air emissions.

I trust you find these comments helpful to the CEAA review process.

Sincerely,

Patrick J. Shea

Pc: Derrick Maddocks, Director
Craig Bugden, Manager, Waste Management Section