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BY COURIER

March 25, 2008

Mr. Stephen F. Waqué
Borden Ladner Gervais LLP
Scotia Plaza
40 King Street West
Toronto ON M5H 3Y4

Dear Mr. Waqué:

EB-2007-0050 – Hydro One Networks' Section 92 Bruce - Milton Transmission Reinforcement Application – Hydro One Networks' Response to Interrogatory Questions from Powerline Connection

I am attaching a paper copy of the responses to the interrogatory questions from Powerline Connection.

All Intervenors and the Ontario Energy Board will also be sent electronic text searchable Acrobat files by email for the following Interrogatory Responses:

OEB Staff List 2
Updated response to OEB Staff Interrogatory C-1-2.6
Pollution Probe List 4 and List 5
Energy Probe List 2, 3 and List 4
Ross Interrogatories to Hydro One List 1
Ross Interrogatories to the Ontario Power Authority List 1
Ross Interrogatories to the Independent Electricity System Operator List 1
Powerline Connection List 1

One complete paper copy of all the EB-2007-0050 Interrogatory Responses organized in binder sets will be sent to your attention shortly. Electronic text-searchable copy of interrogatory responses will also continue to be available for download from the Hydro One Networks regulatory website.

Sincerely,

ORIGINAL SIGNED BY ODED HUBERT

Oded Hubert

c. Ms. Kirsten Walli, Ontario Energy Board

Powerline Connections INTERROGATORY #1 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request: What land use policy does OPA refer to in their letter dated March 23, 2007? Please produce this land use policy.

Response

OPA refers to the Provincial Policy Statement issued by the Ministry of Municipal Affairs and Housing, effective March 1, 2005. Please refer to Hydro One's application at section 1.6 – Infrastructure and Public Service Facilities, at Exhibit B, Tab 6, Schedule 5, Appendix 13, page 10.

Powerline Connections INTERROGATORY #2 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Ref: Exh. A/T 2/S 1/pp. 1, 2 and 3 and Exh. B/T 1/S 3/pp. 1 and 2

Request: What reliability requirements referred to in Exh. A/T 2/S 1/pp. 1, 2 and 3 and Exh. B/T 1/S 3/pp. 1 and 2 are being met by the Project?

Response

The reliability requirements are discussed in the applicable NPCC and IESO documents. These are further referred to and discussed in response to Board Staff Interrogatory 3.2.

Powerline Connections INTERROGATORY #3 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request: How much additional transmission capacity does the new line add that could not be realized by upgrading, modifying or intensifying the use of existing out of Bruce lines?

Response

Existing transfer capability of the existing Bruce transmission facilities is typically 5000 MW.

The upper limit of the transfer capability through modifying the existing Bruce transmission facilities is approximately 5,400 MW. This is based on implementation of the near term measures already identified in the Application.

As the proposed Bruce to Milton Project will provide transfer capability from the Bruce Area of 8,160 MW the answer to the question is 8,160 MW – 5,400 MW or 2,760 MW.

Powerline Connections INTERROGATORY #4 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request: In responding to the interrogatories stated above, please respond by identifying all existing lines out of Bruce, specifying possible upgrades to each line, estimating cost of upgrades and corresponding yield in capacity.

Response

For the Hanover x Orangeville 230 kV line upgrade, the estimated cost of increasing the emergency thermal rating is $4.3 million, which would yield a 400 MW increase in transfer capability assuming that the other near term measures are implemented. However, if the other near term measures are not implemented, the increase in transfer capability is essentially zero.

Near-term system plans indicate that, for both economic and technical reasons, no increase in transfer capability is planned for any of the following potential upgrades:

- Bruce x Hanover 230 kV line,
- Bruce x Owen Sound 230 kV line,
- Bruce x Detweiler 230 kV line,
- Bruce x Milton existing 500 kV line, and
- Bruce x Longwood 500 kV line.

Powerline Connections INTERROGATORY #5 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request: What consideration has HONI given to upgrading the existing 230 kV transmission line from Hanover to Orangeville in particular? What upgrading options has HONI considered?

Response

HONI is uprating a section of the 230 kV line from Hanover to Orangeville (see: Day 1 Technical Conference Presentation Exhibit KT.1 slide 38 and transcript page 33). This is being accomplished through the tightening of the conductors, and increasing the ground clearance (see: Day 1 Technical Conference transcript pages 99-102).

Powerline Connections INTERROGATORY #6 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request: In particular, what additional capacity would be achieved by upgrading the existing 230 kV line to 500?

Response

The increase in transfer capability would be approximately 500 MW if the existing Bruce x Hanover x Orangeville 230kV line was upgraded to 500 kV. However, please note that the Orangeville TS would not be capable of absorbing any additional capacity without further upgrades. New 230 kV transmission lines to either of the Essa TS or the GTA would be required.

Powerline Connections INTERROGATORY #7 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request: How much less land would be required to use the existing 230 kV right of way than is being required to build a whole new 500 kV line on the route of the existing 500 kV line?

Response

Both the existing 230 kV line and the proposed 500 kV line are required to meet the identified Project need, including local load requirements. Therefore, if the 500 kV line were built in place of the existing 230 kV corridor, a new 230 kV line and corridor would be required along the route.

Notwithstanding the above, a calculation of how much less land would be required if the existing 230 kV right of way were used to build the new 500 kV line is presented below.

Under the proposal before the Board, about 53 meters of additional corridor width is required when placing the new 500 kV line next to the existing 500 kV line. Approximately 32 meters of additional corridor width would be required to replace the existing 230 kV with a new 500 kV line in this scenario. The difference between the two scenarios is about 21 meters (53 meters less 32 meters).

The existing 230 kV corridor runs approximately 90 kilometers from Willow Creek Junction (in Kincardine) south-easterly to Colbeck Junction (in East Luther Grand Valley). Approximately 192 hectares less (475 acres) would be required if the 230 kV right of way were used to build the new 500 kV line (90 km multiplied by 21 m).

Powerline Connections INTERROGATORY #8 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request: If HONI has decided not to upgrade the existing 230 kV transmission line, what is the reasoned basis for that decision?

Response

Hydro One assumes the term "upgrading" is being used by Powerline Connections to mean a change of the 230 kV transmission line to a 500 kV transmission line. This has been considered in response to Powerline Connections Interrogatory 7.

Powerline Connections INTERROGATORY #9 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request: What would be required to upgrade the existing 230 kV transmission line by means other than conversion to a 500 kV line?

Response

Hydro One is not aware of any reasonable alternatives that could be undertaken to upgrade the 230 kV transmission line that would meet the identified transfer capability requirement.

Powerline Connections INTERROGATORY #10 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request: Could any additional power produced at the Bruce Power plant be carried along the existing 230 kV transmission line?

Response

No, the existing 230 kV transmission line between Bruce and Orangeville is presently at its thermal limit. A section of that line between Hanover and Orangeville is being uprated as one of the near-term measures to increase capacity. Please see response to Powerline Interrogatory 4.

Powerline Connections INTERROGATORY #11 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request: How much more power can the existing 230 kV transmission line carry?

Response

Please refer to response to Powerline Interrogatory 4.

Powerline Connections INTERROGATORY #12 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request: Could upgrading the existing 230 kV transmission line with a higher voltage or additional line meet the projected generation capacity of Ontario's power needs? Has this option been given any technical consideration? If not, why not?

Response

Conversion of the existing 230 kV lines in the Bruce Area to a 500 kV line would require the line to be rebuilt with new structures and a wider right-of-way. The existing 230 kV is an integral part of the Bruce Area transmission. Replacing the existing 230 kV line with a 500 kV line would not provide the required increase in the transfer capability

Powerline Connections INTERROGATORY #13 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request: Is power loss over distance greater with the existing 230 kV line than it would be with an upgraded/up-to-date 230 kV line?

Response

Yes, transmission losses could be reduced with different 230 kV conductors.

The largest conductors that are currently installed on the 230kV system in Ontario are 1924kcmil and these have a resistance of 3.6 ohm/100km. The section of circuits B4V & B5V between the Bruce Complex and Hanover TS is equipped with 1277.5kcmil conductors and these have a resistance of 5.4 ohm/100km.

With six Bruce units together with the 675MW of wind-turbine projects in-service, the flow on circuits B4V & B5V will be approximately 730A/circuit.

With the existing conductors, the combined losses over the 48km section between the Bruce Complex and Hanover TS would therefore total approximately 8.3MW. Replacing the existing 1277.5kcmil conductors with 1924kcmil ones would reduced the combined losses over this line section to 5.5MW.

This, of course, presupposes that the structures on the B4V & B5V line would be adequate to support the larger and heavier conductors.

Even if the structures were shown to be adequate, it is unlikely that a reduction of approximately one third in the transmission losses over this line section would justify the cost of replacing all of the conductors.

Powerline Connections INTERROGATORY #14 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request: Other than to follow the existing corridor, what is the technical justification for bringing the new line through Hanover?

Response

Please see the response to Fallis Interrogatory 105.

Powerline Connections INTERROGATORY #15 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request: Does HONI rely on the March 2007 instruction from OPA to proceed with approvals for the Bruce to Milton Project to meet an in-service date of December 11, 2011?

Response

Yes. Hydro One is relying on the OPA's determination of need for the justification of the Bruce to Milton Project. The referenced December 2011 date has been determined by Hydro One as the earliest possible in-service timing for the Project.

Powerline Connections INTERROGATORY #16 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request: If HONI relies on the OPA instruction and or direction, has HONI critically analyzed or reviewed the basis for that instruction or direction?

Response

The Ontario Power Authority (OPA) is an independent, arms-length provincial agency responsible for long-term electricity planning in the Province of Ontario. As part of its mandate the OPA has identified the need for the Project.

Hydro One is a transmission service provider and does not carry out an oversight role with respect to the OPA's determinations. Hydro One works collaboratively with the OPA to consider transmission alternatives and to make determinations that meet the identified need and conform with Hydro One's accepted planning standards as well as accepted construction and engineering criteria.

Powerline Connections INTERROGATORY #17 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request (a): Has HONI reassessed the question of need for new transmission capacity to the GTA in view of the applications made and proposals in place for a new nuclear generating capacity at Darlington?

Request (b): Does HONI admit that the penalty which OPA is committed to pay Bruce Power in the event that a new 500 kV line is not constructed is irrelevant to the exercise of discretion by the Ontario Energy Board?

Response

Part a): Please refer to Energy Probe Interrogatory #6.

Part b):

It is for the Board to determine what is or is not relevant for the Board's consideration. Penalty amounts could potentially affect the price of electricity paid by the consumers in Ontario. Transmission reinforcement projects, such as the Bruce to Milton Project, that provide for required transmission transfer capability reduce this risk.

Powerline Connections INTERROGATORY #18 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request: If HONI does not admit that that penalty is irrelevant, then what evidence will it produce from the OPA with respect to the existence of that contract, its reasonableness and its relationship to need?

Response

Please see the response to Powerline Interrogatory 17 and Exhibit B, Tab 6, Schedule 5, Appendix 12.

Powerline Connections INTERROGATORY #19 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request (a): In particular, what explanation is available for the fact that the Joint Board under the *Consolidated Hearings Act* in its decision of February 20 1989 found that the transmission line it was approving for South Western Ontario was sufficient to provide transmission capacity for the power generation at the Bruce Nuclear Power Development and this conclusion was reaffirmed in an August 2005 study by the IESO in the context of re-commissioning units at the Bruce nuclear plant?

(b) In responding to the interrogatories stated above, if there are changes in factual circumstances, changes in analytical methods, or changes in assumptions, please specify what these changes are and their impact?

Response

The transmission capacity of the approved transmission line in 1989 was evaluated in the circumstances of the Ontario power grid at the time, which circumstances have changed. Please refer to the response to Board Staff Interrogatory 1.3 for an explanation of these changes.

Powerline Connections INTERROGATORY #20 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request: To advise how often Bruce is running at peak capacity or 100% capacity for both wind and nuclear power at the same time in the existing scenario.

Response

The wind farms in the Bruce Area have been in commercial operation for only a short period of time. Accordingly, the review undertaken has only considered generation production during the 2007 calendar period. For the purpose of responding to this question, the IESO assumed that the peak capacity of the two Bruce A units in service (i.e., Units 3 and 4) were equal to or above 1,500 MW. For the Bruce B units, peak capacity was assumed to be equal to or above 3000 MW.

The number of days that the Bruce nuclear stations and Amaranth and Kingsbride wind farms were simultaneously producing at or above peak capacity during 2007 are as follows:

Month	**No. of Days**
Jan	0
Feb	0
Mar	0
Apr	2
May	4
Jun	10
Jul	9
Aug	7
Sep	2
Oct	0
Nov	0
Dec	1

Powerline Connections INTERROGATORY #21 List 1

Interrogatory

The following Interrogatories concern Issue 1.1: Has the need for the proposed project been established?

Request: To advise how often Bruce nuclear power generation is running at full capacity in the existing scenario.

Response

As noted in Hydro One's earlier correspondence dated February 26, 2008 to the Board and parties, generation production data prior to market opening is not available.

Not all Bruce A units were in service from market opening to the present. For the purpose of responding to this question, the IESO has assumed that the full capacity of the two units that were in service (i.e., Bruce A Units 3 and 4) during this period were equal to or above 1,500 MW. For the Bruce B units, it was assumed that full capacity was equal or above 3000 MW.

The number of days that the Bruce nuclear stations were simultaneously producing at their full capacity (i.e., at or above 4500 MW) during this period are as follows:

Year	No. of Days
2002	0
2003	0
2004	6
2005	13
2006	60
2007	64

Powerline Connections INTERROGATORY #22 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: What is HONI's risk management policy concerning electromagnetic field ("EMF") claims?

Response

Hydro One does not have a specific risk management policy concerning EMF claims because Hydro One has not had an EMF claim and does not believe the risk presented by EMF claims is material.

Powerline Connections INTERROGATORY #23 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: Can HONI, or does HONI purchase insurance for risks associated with its projects? What risks are insured? In responding to the interrogatory stated above, please produce a copy of the disclosure made on EMFs and other proximity risks and the policy wording obtained.

Response

Hydro One's insurance risk management practices involve multiple layers of coverage. As the question above concerns Project risks relevant to this proceeding, Hydro One manages cost risk by appropriately managing its procurement activities and in particular with respect to the cost of long-lead items and contracts with service providers. In-service timing risks are also expected to be managed by Hydro One taking steps to acquire interests in lands through voluntary negotiations and through the use of option agreements which are designed to provide Hydro One with the right but not the obligation to acquire interests in lands once all necessary regulatory approvals and any subsequent appeals have occurred. This is a common risk mitigation method used by utilities. Hydro One does not consider EMF to be a relevant or in any event material Project risk that would require specific policies of insurance. Please refer to the response to Powerline Interrogatory 22.

Powerline Connections INTERROGATORY #24 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: How are EMFs factored into HONI's analysis of project risk factors generally and specifically in terms of land acquisition and claims for Injurious Affection?

Response

EMFs have not been factored into Hydro One's analysis of project risk factors because they are not considered to be relevant or, in any event, material relative to other risks. Issues respecting land acquisition and claims for Injurious Affection are not matters that are relevant to this proceeding. Please refer to page 11 of the Board's Issues Day Decision and Order and page 6 of the Board's Motions Day Decision and Order.

Powerline Connections INTERROGATORY #25 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: How does HONI budget for EMF claims?

Response

The estimated costs of the Project do not include provision for EMF claims as they are not expected to be material.

Powerline Connections INTERROGATORY #26 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: Has HONI studied the extent of EMFs along the existing Bruce to Milton transmission line? Please produce all technical information, data and studies associated with existing EMFs along this transmission line. Please produce all site specific testing done since the establishment of the line.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #27 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: What is the extent of the EMFs associated with the existing lines? Identify the envelope of the existing field on a map.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #28 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: What is the extent of the EMFs associated with the proposed line? How will the proposed project affect landowners at various spots of the proposed line? How will the level of EMFs differ at various spots on the proposed line? Identify the new envelope of potential or measurable impact on a map.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #29 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: What is the estimated maximum mG measure that can be expected upon the completion of the proposed Bruce to Milton transmission line(s)? Have there been any studies to estimate this maximum? Please produce these studies or records.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #30 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: What Has HONI ever received any complaints relating to EMFs between Bruce and Milton. If so, please produce the nature of the complaints and the outcome of the complaints.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #31 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: How many 60 Hz Electric and Magnetic Field Measurement Data Sheets are completed each year by HONI? How many have been completed in regard to the existing Bruce to Milton transmission line? What are the results of these inspections? Please provide copies of all of these documents.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #32 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: How accurate is the EMDEX Snap 60 Hz Magnetic Field Meter used to conduct the inspection? Has HONI experienced any discrepancies in relation to the device's accuracy? Currently, is this the only device used by HONI to read EMF levels?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #33 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: What are the instructions to HONI's inspectors as to what classifies as a significant EMF reading? What are the inspectors instructed to tell homeowners in regard to those readings?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #34 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: For what purpose is any EMF testing completed by HONI? Who reviews the results of any EMF testing that is completed by HONI?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #35 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: What analysis or summary is made of the EMF testing once the tests have been finalized?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #36 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: What is the level of EMF exposure from transmission lines in rural residential outdoor amenity areas that triggers a policy of avoidance?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #37 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: What is the level of EMF exposure that creates a threshold for further investigation by HONI?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #38 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: What is the level of EMF exposure that directs a prudent avoidance approach and would suggest demolition of residential dwellings if owned by HONI rather than the resale of them?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #39 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: What level of EMF exposure in outdoor amenity areas directs HONI to offer an owner an opportunity to sell the residential property?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #40 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: With respect to questions stated above concerning EMF exposures and outdoor amenity areas, please respond to the same questions on the basis that the inquiry concerns indoor living areas in a residential dwelling.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #41 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: What internal memorandum, including, but not limited to electronic communication and including but not limited to policies and practices, exists that relates to, touches on, or informs HONI's view concerning responding to different levels of EMFs. In particular, report on communications that relate to EMF levels that prompt investigation, documentation or reporting to different levels of management?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #42 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: Has HONI factored in the costs of damages or expenses that may arise as a result of the expansion of the EMFs associated with the corridor? If not, why not? Are EMFs factored into HONI's cost-benefit analysis at all? If so, where are they considered? Please provide a breakdown of the impact of this factor on the cost-benefit analysis. If not, why not?

Response

Please refer to the response to Powerline Interrogatory 25.

Powerline Connections INTERROGATORY #43 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: Please describe in detail the design factors and their associated costs, that exist and can be implemented that would affect the nature and extent of the EMFs surrounding the lines.

Response

Hydro One employs a standard utility practice known as optimal phasing to reduce as much as practical the magnetic field strength. On a two circuit tower line, this involves reversing the phasing on opposite sides of the tower. That is, one side will be phased a,b,c from top to bottom and the other side phased c,b,a. This mitigation is essentially zero cost. Having the middle arm of a tower longer and reducing the spacing between phases also reduces magnetic fields. There are other technical reasons for having the middle arm longer and spacing closer and hence, these are also zero cost mitigation measures. Increasing tower height reduces magnetic field levels found at the edge of the right-of-way. To obtain a significant reduction in EMF at the edge of the right-of-way, a significant increase in tower height is required. This causes a significant increase in the cost of the transmission line towers and is not normally employed for this reason.

Powerline Connections INTERROGATORY #44 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Ref: Exh B / T 4 / S 2

Request: Please advise whether the third party appraiser(s) who prepared the Preliminary Assessment, were specifically asked *not* to consider the impact on the land value of the stigma associated with EMFs.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #45 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: Please provide HONI's study or studies commissioned by HONI, as well as any modelling, regarding the extent of the current EMFs around the existing transmission lines and future EMFs around the proposed transmission lines.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #46 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: Has HONI been required to pay damages, settlement costs or expenses to landowners or affected parties as a consequence of EMFs? As these costs relate to the overall project costs, please provide details of each payment and a total of all EMF related compensation.

Response

As this Interrogatory concerns the Bruce to Milton Project, no. As this Interrogatory concerns any project similar to the Bruce to Milton Project, no.

Powerline Connections INTERROGATORY #47 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: Please advise what device is used and/or what method is used to determine the extent of the EMFs.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #48 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: Please advise whether HONI has been required to expend money to satisfy claims for damages associated with EMFs.

Response

Please refer to response to Interrogatory No. 46.

Powerline Connections INTERROGATORY #49 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: Does part of the $28 million forecasted for contingencies include satisfaction of claims related to EMFs.

Response

No. The forecast contingency amount does not include EMF claims. Please see the response to Powerline Interrogatory 25.

Please see Exhibit B, Tab 4, Schedule 2, page 3 for the factors that are taken into account in the forecast contingency amount. This matter was also covered during the second day of the Technical Conference. Please see pages 91-92 of the transcript.

Powerline Connections INTERROGATORY #50 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: Has HONI been forced into any legal proceeding relating to the existing Bruce to Milton transmission line(s)?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #51 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: Has any consideration been given to land acquisition costs? If so, provide that analysis, including the costs of the lands required, the rate proposed to be paid, and the basis for the calculations.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #52 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: Does HONI admit that in rural and rural recreational environments, view is an important contributor to assessing value?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #53 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: Does HONI admit that additional powerlines interfere with and potentially change the character of the view significantly?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #54 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: If there is no admission in relation to the questions asked concerning loss of view, why does HONI consider its estimates of risks and cost reasonable?

Response

Hydro One has had significant experience with the acquisition of lands for other and similar types of projects. Hydro One therefore believes that the forecast costs associated with Project land requirements are reasonable and take into account the appropriate factors in the circumstances. These factors include market data and the fact that the required lands are immediately adjacent to existing transmission infrastructure.

Powerline Connections INTERROGATORY #55 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: Has HONI based its analysis on impact on new land acreage or has it considered improvements on parcel impacted but not situated on the land to be acquired?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #56 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: If some parcel improvements have not been considered, how have reasonable estimates been formulated?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #57 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: Has HONI ever received any complaints relating to the noise emitted from transmission lines in the Bruce to Milton corridor? Please produce records of all noise level complaints related to the existing Bruce to Milton corridor.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #58 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: How many inspections has HONI done of homes to test noise levels in regard to the existing lines? What are the results? Please provide copies of these inspections to date.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #59 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: What are the instructions to HONI's inspectors as to what classifies as a significant noise reading? What are the inspectors instructed to tell homeowners in regard to those readings?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #60 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: Who reviews the results of any noise level testing that is completed?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #61 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: For what purpose is any noise level testing completed?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #62 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: What analysis or summary is made of the noise level testing once the tests have been finalized?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #63 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: If noise impacts have not been considered, how have reasonable estimates been formulated?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #64 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: In estimating loss of view, EMF, noise, farm operation and other impacts, has HONI assessed the information available to it based on purchases and re-sales of impacted property?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #65 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: Please provide a list of all properties including residential dwellings that HONI or its predecessors has purchased beside existing or proposed rights of way since 1980.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #66 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: Please identify which of those properties has been sold by HONI or its predecessors after acquisition from private land owners. With respect to those properties please specify the date of purchase by HONI or its predecessors and the date of sale and the purchase price at the date of purchase and the date of sale. If there are factors known to HONI which would impact the purchase price, other than the negative impact or injurious affection of the adjoining powerline, please specify what these factors are and provide information respecting them.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #67 List 1

Interrogatory

The Following Interrogatories Concern Issue 1.3: Have all appropriate project risk factors pertaining to the need and justification (including but not limited to forecasting, technical and financial risks) been taken into consideration in planning this project?

Request: Has HONI factored in the costs of Injurious Affection in its budgeted land costs? If not, why not? If so, provide a breakdown of those estimates in relation to total land costs.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #68 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: Please produce OPA's files, including their analysis of this project compared to other alternatives. Please advise specifically, what consideration has been given to the Bruce to Essa option, and what information and conclusions does OPA provide for rejecting that alternative beyond what is included in HONI's application?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #69 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: What is the projected cost of the Bruce to Essa option?

Response

As the length of the Bruce to Essa option is approximately the same as for the proposed Bruce to Milton line, the cost would be about the same.

Powerline Connections INTERROGATORY #70 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: What If HONI has not estimated the projected cost of the Bruce to Essa option how could it appropriately compare that option to the option before the Ontario Energy Board?

Response

The Bruce to Essa option was screened out during the OPA screening process because it does not meet the identified need. This matter was discussed at the Day 1 of the Technical Conference (Exhibit KT.1, slide 31).

Powerline Connections INTERROGATORY #71 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: Why can't the renewable energy load not be carried on the existing Bruce to Orangeville system with upgrades to that system?

Response

Please refer to response Energy Probe Interrogatory 7 for a description of the means by which renewable energy is connected to the Bruce Area transmission system

Powerline Connections INTERROGATORY #72 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: What are the costs of the upgrades that would carry the renewable energy load?

Response

Please refer to the response to Energy Probe Interrogatory 7 for a description of how existing wind generation is connected to the Bruce Area transmission system.

The increase in transfer capability provided by the Bruce to Milton project, along with the near term and interim measures, will enable committed and future wind generation to be accommodated. Please refer to Exhibit B, Tab 4, Schedule 2 for the cost of the new line. Please also refer to the response to Pollution Probe Interrogatory 40 for the cost of near term and interim measures.

Powerline Connections INTERROGATORY #73 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: What are the combined projected costs of the Bruce to Essa option plus the upgrades to the Bruce to Orangeville system?

Response

Please refer to the response to Powerline Interrogatory 69 with respect to the cost of the Bruce to Essa option. Please refer to Powerline Connections Interrogatory 4 with respect to the cost of uprating the Bruce to Orangeville 230 kV line.

Powerline Connections INTERROGATORY #74 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: Appendix 1 attached (provided by Powerline Connections)

Request: The chart attached at Appendix 1 presents a summary of the estimated impacts of the Bruce to Essa option, the Bradley to Georgetown option and the selected Bruce to Milton proposal. Are the facts as summarized in the attached chart summarizing impacts accurate? Does HONI agree that the chart can be used as a basis for measuring the relative impact of the proposed Bruce to Milton project?

Appendix 1

Table 1.1 - Comparison of the Likely Environmental Effects of Hydro One's Bruce x Milton "Reference Route" to: Original Bradley x Georgetown Route (incl. Pt. 95 to Milton TS, 1974) and Ontario Hydro Preferred Middle Route from Bradley Jct. To Essa TS. (Plan 7, 1984)

Key Environmental & Socio-economic Evaluation Criteria	HOne-Bruce x Milton Reference Route(RR)	1st Bradley x Georgetown	Bruce x Essa TS Preferred Route	Comments
Route Length (km)	180 km	179.2 km	158.5 km	
Power System Security	2 x 2cct. 500 kV lines on same r/w All BNPD circuits and Nanticoke lines through Milton TS	Separate from Bradley x Kitchener	System Plan 7 Preferred Route All 3 BNPD lines have geographic separation	Bruce x Essa connects to Claireville TS. 200 ft available on Essa x Claireville r/w
Existing property rights	24km-Bradley Jct.	24km-Bradley Jct.	24km-Bradley Jct.	BxM is fourth line on r/w from BNPD to Bradley Jct.
Total right-of-way area	1152 ha	1260 ha	1205 ha	BxM & BxG utilize adjacent r/w
Human Settlement Number of properties affected	480	469	393	B x E affects 20% fewer properties
Residential / farm buildings within proposed r/w (i.e. likely removal)	33	6	5	RR - 6x more displacement of residents. More than all the previous 500kv lines combined
Residential/farms buildings within 100m of r/w (i.e. close proximity)	41	Not available	30	Socio-economic issues – view, property values, EMF
Diagonal severance of properties	81 km	Not available	31.3 km	Diagonal severances create greatest property impacts
No. properties diagonally severed	206	209	80 (approx)	RR - reprises 1960's routing
No. properties with potential for three transmission lines	186	0	0	Severe impact - Ontario Hydro Policy - 3 t-lines on a property qualifies for a buyout offer

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5

Powerline Connections INTERROGATORY #75 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: Given that alternative routings impact property owners in significantly different ways, and in particular, that the Bruce to Milton routing impacts a proportionately high number of residential dwellings, are the relative land costs or compensation costs in need to be a relevant factor to consider in assessing other project alternatives?

Response

Detailed land costs or compensation costs for each alternative would only be considered if more than one reasonable alternative was found to meet the identified transfer capability requirements and other project objectives. Please refer to response to Board Staff Interrogatory 2.4.

Powerline Connections INTERROGATORY #76 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: Has HONI looked at the upgrade, modification or intensification of existing lines as a project alternative? If so, produce that analysis. If not, why not?

Response

Please refer to response to Powerline Connections Interrogatory 3 and 4.

Powerline Connections INTERROGATORY #77 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: Has HONI looked at any alternative beyond the construction of a new line as proposed in this amended leave application? What alternatives were considered? Please produce that analysis.

Response

Please refer to Pollution Probe Interrogatory 39.

Powerline Connections INTERROGATORY #78 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: Does HONI agree that until the Terms of Reference for the Environmental Assessment are approved, it cannot state with certainty what alternatives it will be advancing before the Ontario Energy Board?

Response

No, Hydro One disagrees. The Terms of Reference for the Environmental Assessment do not consider the other options that were evaluated and screened out by the OPA. None of those are alternatives to the Project as none meet the identified transfer capability requirement.

Powerline Connections INTERROGATORY #79 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: Has any input been received from the public or municipalities in the development of the alternatives? If so, how have those comments affected HONI's consideration of alternatives?

Response

Input from interested stakeholders on the development of alternatives took place during late 2006 and early 2007. During the fall of 2006, the OPA consulted with interested stakeholders on the need for transmission reinforcement in the Bruce area and the transmission options to accommodate identified power supply needs (see last paragraph on page 2 of Exhibit B, Tab 6, Schedule 5, Appendix 4). During December 2006 and January 2007, representatives from OPA and Hydro One met with various mayors, councilors, chief administrative officers and other municipal planning staff of affected municipalities, counties and regions along the Bruce to Milton route to discuss the need for the project and the various options under consideration (see first paragraph on page 3 of Exhibit B, Tab 6, Schedule 5, Appendix 4; and section 3.1 of Exhibit B, Tab 6, Schedule 6).

During these activities, interested stakeholders offered their input about the various options. This input was considered by OPA and Hydro One in the consideration of alternatives.

As discussed in Exhibit B, Tab 3, Schedule 1 and as discussed at the Day 1 Technical Conference (Exhibit KT.1 slides 26-31), upon completion of their assessment of transmission options the OPA determined that only the Bruce to Milton option provided the required transfer capability and also met other project objectives.

Powerline Connections INTERROGATORY #80 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: With respect to the Hanover to Orangeville uprating of the 230 kV line – has HONI analyzed uprating the 230 kV line from Bruce to Hanover; if so, please produce that analysis including the additional capacity achieved; if this has not been considered by HONI; why not?

Response

The following Table shows both the continuous and the long-term emergency ratings for the two sections of circuits B4V & B5V, between the Bruce Complex and Orangeville TS.

For the section between Hanover TS and Orangeville TS, the long-term emergency ratings have also been provided for both the existing maximum conductor operating temperature of 104°C and the future operating temperature of 127°C, following the completion of the uprating of this section of the line.

230 kV Circuits B4V & B5V			
Conductor	Max. Conductor Operating Temperature	At an ambient temperature of 35°C & a wind speed of 4 km/hr	
		Continuous Rating at 93°C	Limited-time Emergency Rating at 127°C
Section: Bruce Complex to Hanover TS Length: 48.2 km			
1277.5 kcmil	127°C	1080 A (453 MVA)	1430 A (599 MVA)
Section: Hanover TS to Orangeville TS Length: 77.2 km			
1192.5 kcmil	Existing: 104°C	1060 A (444 MVA)	1180 A (495 MVA)
	Future: 127°C		1400 A (587 MVA)

Note: The MVA ratings correspond to a voltage of 242 kV

Since the peak load at Hanover TS is typically around 80 MVA, the difference in the flows on the Bruce to Hanover section and those on the Hanover to Orangeville section of circuits B4V & B5V would be expected to vary between 21 MVA (50A) off-peak and 40 MVA (95A) on peak, per circuit.

Since the present difference in the long-term emergency ratings of the two line sections is shown to be approximately 250 A (1430 A – 1180 A), this would mean that after allowing for the load at Hanover TS, the thermal rating of the section between Hanover TS and Orangeville TS would effectively limit the maximum flows that could occur over the section between the Bruce Complex and Hanover TS.

Following the uprating of the Hanover TS to Orangeville TS, the difference between the respective long-term emergency ratings will be only 30 A (1430 A – 1400 A). This would be similar to the off-peak load at Hanover TS.

Consequently, if the section of circuits B4V & B5V between the Bruce Complex and Hanover TS were to be uprated, the section between Hanover and Orangeville TS would once again become limiting. This would mean that the entire line would need to be uprated to obtain any significant benefit.

It should also be noted that, following the uprating of the Hanover TS to Orangeville TS section, the conductor operating temperatures for both sections would be at the maximum permissible value of 127^{o}C. Any uprating would therefore involve replacing the existing conductors will larger ones over the entire 125 km length of the line. In addition, if the existing structures were found to be inadequate to support the larger (and heavier) conductors, then these may need to be strengthened or replaced.

Powerline Connections INTERROGATORY #81 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: To produce the IESO report and any analysis or reports which HONI has performed or has commissioned which would examine the uprating of the line between Bruce to Hanover.

Response

As indicated in the response to Interrogatory No. 80, there would be no benefit in uprating the section of circuits B4V & B5V between the Bruce Complex and Hanover TS, following the completion of the uprating of the section between Hanover TS and Orangeville TS, because the latter section would once again become limiting. Accordingly, detailed analysis was not carried out for this option.

Powerline Connections INTERROGATORY #82 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: To advise if other powerlines in Ontario have four (4) powerlines strung along the same right-of-way; if so, to provide particulars.

Response

Yes. Examples of other rights-of-way that include four powerlines are:

Lennox to Bowmanville (4cct. 500 kV) – 178 km
Cherrywood to Clairville (4cct. 500 kV0 – 45 km
Milton to Clairville (4cct. 500kV) – 33 km
Cherrywood to Bowmanville (4cct. 500 kV) – 45 km
Cherrywood to Pickering GS (8cct. – 230 kV) – 7 km

There are also numerous powerline sections with more than four circuits of multiple voltages (115/230/500).

Powerline Connections INTERROGATORY #83 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: Should HONI be given leave to construct up to four (4) powerlines along the Bruce to Milton corridor, please compare the length of the Bruce to Milton section where four (4) lines are intended with the length of the other lines in Ontario which have four (4) powerlines on the same right of way.

Response

The length of the Bruce to Milton line is approximately 180 km. Please refer to the response to Powerline Interrogatory 82 for the lengths of other similar rights-of-way.

Powerline Connections INTERROGATORY #84 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: Please advise if there is a relationship between the age of a (230 kV) line and the ability to uprate it.

Response

A line is maintained throughout its lifetime to keep its original design strength. There is therefore no relationship between the age of a line and the ability to uprate it. Once a line is at its end-of-life, after approximately 100 years, it is usually completely rebuilt.

Powerline Connections INTERROGATORY #85 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: Please advise if any of the 500 kV circuits on the current Bruce to Milton line can be uprated using the stretching technique to raise the line off the ground.

Response

Hydro One assumes that "the stretching technique" refers to retensioning. Retensioning cannot uprate the capacity of the current Bruce x Milton 500kV line because the line is already tensioned to its maximum conductor operating temperature of 127° C. The design operating temperature of a standard conductor (Aluminium Conductor Steel Reinforced or ACSR) in the Hydro One system is 93° C. If ACSR conductor is continually operated above 93°C, the conductor will anneal resulting in loss of strength and be prone to failure before the end of its design life.

ACSR conductors can tolerate an operating temperature of up to 127° C for relatively short periods of time. This is termed the emergency rating and is employed when one circuit of a two circuit line is out of service for maintenance. The Bruce to Milton line is already tensioned at 127° C, and hence retensioning would result in no increase in thermal capacity.

Powerline Connections INTERROGATORY #86 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: Please advise if for the Bruce to Milton corridor, HONI has considered whether capacity could be increased by replacing the current 230 kV lines with newer 230 kV lines; if HONI has not considered this upgrading, why not?

Response

No. Replacing the existing 230 kV lines in the Bruce area with newer 230 kV lines would not result in any increase to the transfer capability of the Bruce transmission system. Please refer to the response to Powerline Interrogatory 84 with respect to the maintenance of transmission system circuits at their design rating.

Powerline Connections INTERROGATORY #87 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: Please advise how often does the 500 kV system experience an unforced outage that affects both 500 kV lines that are on one set of towers.

Response

Please refer to the response to Board Staff Interrogatory 1.4(iii).

Powerline Connections INTERROGATORY #88 List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: Please advise how many fewer privately held properties would need to be bought out by HONI if the Bruce to Essa option were put forward rather than the Bruce to Milton option.

Response

Hydro One does not have this information. Once the OPA screened out the Bruce to Essa option because it did not meet the identified need, Hydro One did not pursue additional data collection or analysis of the land inventory required for this alternative.

Powerline Connections INTERROGATORY #89(a) List 1

Interrogatory

The following Interrogatories concerns Issue 2.1: Have all reasonable alternatives to the project been identified and considered?

Request: With respect to the potential route refinement at the Hanover dip, how many alternatives are there

Response

Three potential local route refinements in the Hanover area were proposed by Hydro One for consideration in its assessment, based on feedback received from the public and other stakeholders who participated in Hydro One's consultation program. These potential refinements are shown and described in Exhibit B Tab 3 Schedule 2.

Four additional potential local route refinements were identified by parties attending the landowner workshop held in Hanover on February 2, 2008. These potential refinements were included in Hydro One's assessment.

Powerline Connections INTERROGATORY #89(b) List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: Please produce the assessment undertaken by OPA, HONI and IESO regarding the technical impacts of the two options referred to in the March 23, 2007 letter. How were the two options measured against each other? What factors were used to assess the technical impacts?

Response

Please refer to Pollution Probe Interrogatory #39.

Powerline Connections INTERROGATORY #90 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: In the March 23, 2007 letter, the OPA says that the Bruce to Essa option delivers the committed future generation in the Bruce area, including 700 MW of renewable energy, but rejects that option because it does not accommodate the additional 1000 MW of renewable energy. Is the shortfall in the capacity of Bruce to Essa option only 300 MW, given the indication on the previous page that a total of 1000 MW of renewable energy is forecast?

Response

Please refer to response to Pollution Probe Interrogatory 39.

Powerline Connections INTERROGATORY #91 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: What better capability does the Bruce to Milton line offer as described in the second bullet-point of the March 23, 2007 letter?

Response

Please refer to response to Pollution Probe Interrogatory 39.

Powerline Connections INTERROGATORY #92 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: Regardless of the final form of the Terms of Reference approved by the Minister of the Environment, on what technical basis has HONI restricted its consideration of options to the three modifications from the original proposed Bruce to Milton Project set out in the amended leave application?

Response

Hydro One has not restricted its consideration of options to the three potential route modifications ("route refinements") included in the section 92 application (Exhibit B, Tab 3, Schedule 2). If the potential need for other local route refinements arises in the environmental assessment process, these will be considered as part of that process.

Hydro One proposed a general route in its application to the Board under section 92 of the *Ontario Energy Board Act*, including the potential for local refinements to the route in three specific locations. These locations are the following areas:

1. Brockton/Hanover/West Grey,
2. Camp Creek (West Grey), and
3. Halton Hills.

On March 14, 2008, Hydro One announced its recommendations regarding the above route refinements. These recommendations are to stay with the reference route as proposed in the section 92 application for the Brockton/Hanover/West Grey area and the Camp Creek area, and to modify the reference route to incorporate the proposed route refinement in the Halton Hills area (i.e., switching over to the west side of the existing corridor in the vicinity of Highway 7 in Halton Hills and continuing south into the Milton switching station).

Powerline Connections INTERROGATORY #93 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: Please provide a list of all properties including residential dwellings that HONI or its predecessors has purchased beside existing or proposed rights of way since 1980.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #94 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: Please identify which of those properties has been sold by HONI or its predecessors after acquisition from private land owners. With respect to those properties please specify the date of purchase by HONI or its predecessors and the date of sale and the purchase price at the date of purchase and the date of sale. If there are factors known to HONI which would impact the purchase price, other than the negative impact or injurious affection of the adjoining powerline, please specify what these factors are and provide information respecting them.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #95 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: Landowners and power generation entities have entered voluntary agreements concerning the establishment of wind turbine towers and (their serving) facilities. These agreements provide for a royalty or other yearly payment to be made to the landowner. Please provide a summary of all such arrangements that HONI or its consultants are aware of and any analysis which has been done to attribute the royalty or other payments which are made to impacts such as loss of market value and injurious affection as negotiated in these "willing buyer" "willing seller" circumstances.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #96 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: How has HONI factored this "willing buyer" "willing seller" analysis into the cost benefit analysis for this project?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #97 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: Has HONI considered the use of narrow-based towers? If not, why not?

Response

Yes. However, for reasons of cost and visual aesthetics it is not Hydro One's practice to match an existing line having four-legged towers with narrow base structures.

Powerline Connections INTERROGATORY #98 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: What is the cost differential between narrow-based towers and conventional towers?

Response

Depending on tower height and soil conditions, the cost differential is approximately $50,000 per structure.

Powerline Connections INTERROGATORY #99 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: On other projects, have narrow-based towers lowered the overall project cost? If so, how and how much?

Response

Please refer to the response to Powerline Interrogatory 128 with respect to the overall cost implication of narrow-based towers on the Bruce to Milton line.

Powerline Connections INTERROGATORY #100 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: Is there a technical reason why narrow-based towers could not be used along this proposed line?

Response

There are potential technical reasons for which narrow-based structures might not be able to be used for the Bruce to Milton project, such as at non-tangent locations or in areas of poor soil conditions.

Powerline Connections INTERROGATORY #101 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: If no analysis has been carried out of the costs and benefits of narrow-based towers, can that be done before the hearing?

Response

Please refer to the response to Powerline Interrogatory 128.

Powerline Connections INTERROGATORY #102 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: Has HONI factored into its cost-benefit analysis the cost impacts of claims and damages from landowners whose lands are not specifically required for the project? If not, why not?

Response

Please refer to the response to Powerline Interrogatory 54.

Powerline Connections INTERROGATORY #103 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: How does HONI budget for claims relating to transmission line noise?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #104 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: Has HONI studied the extent of noise emitted from the existing Bruce to Milton transmission lines? Please produce all technical information, data and studies associated with the existing noise levels along this transmission line.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #105 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: Has HONI ever received any complaints relating to the noise emitted from transmission lines in the Bruce to Milton corridor? Please produce records of all noise level complaints related to the existing Bruce to Milton corridor.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #106 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: How many inspections has HONI done of homes to test noise levels in regards to the existing lines? What are the results? Please provide copies of these inspections to date.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #107 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: What are the instructions to HONI's inspectors as to what classifies as a significant noise reading? What are the inspectors instructed to tell homeowners in regards to those readings?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #108 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: Who reviews the results of any noise level testing that is completed?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #109 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: For what purpose is any noise level testing completed?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #110 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: What analysis or summary is made of the noise level testing once the tests have been finalized?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #111 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: HONI purchased lands or paid compensation to owners within 75 meters of the Southwest transmission corridor, has HONI sold any of those the properties? If so, did HONI sell them with disclaimers? Please provide how many properties were sold and the circumstances they were sold under.

Response

Hydro One did not purchase or sell lands in respect of the Southwest transmission corridor project. In any event the subject-matter of this Interrogatory is not relevant to the issues under consideration in this proceeding.

Powerline Connections INTERROGATORY #112 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: What is HONI's estimate of how many houses there are within the proposed new corridor? Will any properties with homes have to be purchased by HONI? On what basis must they be purchased? What are the estimated land acquisition costs to purchase these homes?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #113 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: Has the risk of having so much transmission capacity along one corridor factored into HONI's consideration of alternatives? If so, how? If not, why not?

Response

Yes. Please refer to response to Board Staff Interrogatory 2.10 (ii).

Powerline Connections INTERROGATORY #114 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Ref: Exh B/ T 6 / S 5 / App. 13/ p. 10 / sec. 1.6

Request: Please advise if there are instances in regard to the Bruce to Milton proposed transmission reinforcement where the new proposed line crosses over privately owned property and where there is not an existing line there.

Response

Yes.

Powerline Connections INTERROGATORY #115 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Ref: Exh B/ T 6 / S 5 / App. 13/ p. 10 / sec. 1.6

Request: Please define an existing right-of-way.

Response

The phrase "existing right-of-way" refers to interests in land held by (or for the benefit of) Hydro One for operating transmission facilities (i.e., the existing transmission corridor). This phrase contrasts land interests required for the applied-for Bruce to Milton Project in that additional interests in land are required but ultimately expected to be situated immediately adjacent to the existing right of way.

Powerline Connections INTERROGATORY #116 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Ref: Exh B/ T 6 / S 5 / App. 13/ p. 10 / sec. 1.6

Request: Please confirm that there is no existing line from Orangeville TS to Kleinberg.

Response

There is no existing transmission line running directly between Orangeville and Kleinburg.

Powerline Connections INTERROGATORY #117 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: Please confirm that the Bruce to Claireville to Kleinberg route was rejected as an option as it was considered inconsistent with the 2005 Provincial Policy Statement – land use policy, on the basis that it required a Greenfield right of way.

Response

Yes. Please refer to the Day 1 Technical Conference Presentation (Exhibit KT.1 slide 31).

Powerline Connections INTERROGATORY #118 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Ref: Exh B/ T 6 / S 5 / App. 13/ p. 10 / sec. 1.6

Request: Please advise if it is HONI's position that the proposed Bruce to Milton transmission line does not require any Greenfield corridor on privately owned lands. If it does, then please provide the rationale behind HONI's characterization that HONI would be expanding an existing corridor, rather than creating a new corridor.

Response

The term Greenfield corridor is generally used by Hydro One to refer to interests in land that would form a right-of-way (i.e., land interests necessary for the construction and operation of transmission facilities) which is not contiguous to an existing right-of-way (i.e., land interests already held and used for the purpose of operating existing transmission facilities).

The general route for the Bruce to Milton Project has been planned such that it is located, where possible, immediately adjacent to the existing right-of-way.

Powerline Connections INTERROGATORY #119 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Ref: Exh B/ T 6 / S 5 / App. 13/ p. 10 / sec. 1.6

Request: Please advise of the length of the new corridor required for the Bruce to Crieff option and for the Bruce to Claireville to Kleinberg option.

Response

The lengths are approximately 30 and 52 km, respectively. Please refer to Exhibit B, Tab 3, Schedule 1, page 5. This matter was also discussed at Day 1 of the Technical Conference (page 29 of the transcript).

Powerline Connections INTERROGATORY #120 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Ref: Exh B/ T 4 / S 2 / Table 4 / p 3

Request: With respect to the preliminary assessment for land acquisition costs required for the proposed Bruce to Milton Project, estimated by HONI to be $125 million, please break out the values attributed to the four components for land, being: market value, injurious affection, entitlements under the *Expropriation Act* and applicable allowances.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #121 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Ref: Exh B/ T 4 / S 2 / Table 4 / p 3

Request: Please produce the terms of reference provided by HONI to the third party appraisers for their analysis and report on land acquisition costs.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #122 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Ref: Exh B/ T 4 / S 2 / Table 4 / p 3

Request: Please advise of the approach to the Injurious Affection component of the land acquisition costs taken by the third party appraisers, in view of the fact that no individual property appraisals had been done.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #123 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Ref: Exh B/ T 4 / S 2 / Table 4 / p 3

Request: With respect to the provision for contingencies in the amount of $28 million, please provide a break-out of all items included in that provision and the value attributed to each item, and specifically the value attributed to land cost variability.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #124 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Ref: Exh B/ T 4 / S 2 / Table 4 / p 3

Request: To provide the names and professional qualifications of the third party appraiser(s) retained by HONI to undertake the Preliminary Market Value Assessment.

Response

At this point in the process the names of the third party appraisers retained by Hydro One are not presently available. All third party appraisers will be AACI-accredited. The appraisal firms are: Otto and Company, London; Metrix Realty Group, London and Richmond Hill; Altus Group Limited, Toronto.

Powerline Connections INTERROGATORY #125 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Ref: Exh B/ T 4 / S 2 / Table 4 / p 3

Request: What was the basis for the $218 million forecasted for Material.

Response

Please refer to the response to Powerline Interrogatory 126.

Powerline Connections INTERROGATORY #126 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Ref: Exh B/ T 4 / S 2 / Table 4

Request: With respect to the $218 million forecasted for Material, please advise which similar projects HONI used to benchmark this cost estimate against and further to advise of the fluctuating commodity price risk, and inflation factor for each commodity HONI applied, to derive the $218 million material cost.

Response

Material requirements for major line components were based on the existing Bruce to Milton line. Based on these requirements, material costs were estimated using recent purchase orders for similar materials and inflated to take into account the anticipated construction date. Risks associated with commodity prices have been assessed and any material cost increases are expected to be covered by the contingency allowance.

Powerline Connections INTERROGATORY #127 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Ref: Exh B / T 4 / S 2 / p 4

Request: Describe HONI's process and approach to estimating project costs.

Response

Please see Exhibit B, Tab 4, Schedule 2, page 4.

Powerline Connections INTERROGATORY #128 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Ref: Exh B / T 4 / S 2 / p 3-4

Request: Please advise if HONI has studied the potential cost consequences as they relate to injurious affection, if narrow based towers rather than standard steel towers were implemented for Bruce to Milton; if so, to produce the study and its conclusions.

Response

Yes. Please refer to the response to Powerline Interrogatory 54 with respect to Hydro One's view of its land acquisition cost estimate and to the response to Powerline Interrogatory 98 with respect to the cost differential of narrow-based towers.

Preliminary consideration of the smaller footprint of narrow-based towers versus their higher cost, relative to lattice towers, determined that there was an overall cost disadvantage to using narrow-based towers. This is based on using 300 towers for the project at an estimated incremental cost of $50,000 per narrow-based structure, partly offset by an estimated total footprint savings of five acres.

Powerline Connections INTERROGATORY #129 List 1

Interrogatory

Issue 2.3 For all of the considered alternatives, does the evaluation methodology utilized include a cost benefit comparison as well as a comparison of all quantitative and qualitative benefits

Request: Please provide the cost analysis for: a) the Bruce to Claireville to Kleinberg; b) the Bruce to Crieff; and c) the Bruce to Milton options.

Response

Please refer to response to Pollution Probe Interrogatory 39.

Powerline Connections INTERROGATORY #130 List 1

Interrogatory

The following Interrogatories concern Issue 2.2: Set out in detail the evaluation methodology applied to all the alternatives?

Request: Please provide HONI's cost-benefit analysis associated with switching the proposed route over, south of Hanover and comparing the relative cost of land acquisition and construction for both sides. if HONI has not done such an analysis, to advise if HONI would be prepared to do so and to provide, prior to the hearing.

Response

Please see Exhibit B, Tab 3, Schedule 2 for a discussion of the factors affecting the relative cost of the proposed diversion in the Camp Creek area.

On March 14, 2008, Hydro One announced its recommendations regarding the route refinement for the Camp Creek area. Hydro One's recommendation is to stay with the reference route as proposed in the section 92 application for the Camp Creek area. Accordingly the cost-benefit analysis requested is no longer under consideration.

Powerline Connections INTERROGATORY #131 List 1

Interrogatory

The following interrogatories concern Issue 3.1: Are the proposed near term and interim measures as outlined in the application appropriate?

Request: Has HONI given consideration to the extended use of the proposed near term and interim measures as an alternative to the project? Can extended use of those near term measures and interim measures satisfy the transmission requirements permanently if the predicted renewable generation is not realized? Under what circumstances could the extended use of the near term measures satisfy the generation requirements, and for how long?

Response

Refer to responses to Board Staff Interrogatories 3.2 and 3.4

Powerline Connections INTERROGATORY #132 List 1

Interrogatory

The following interrogatories concern Issue 3.1: Are the proposed near term and interim measures as outlined in the application appropriate?

Request: To produce the consultant's report on series compensation as an interim measure, together with any analysis HONI performed concerning series compensation.

Response

Please refer to responses to Pappas Interrogatories 1 and 6.

Powerline Connections INTERROGATORY #133 List 1

Interrogatory

The following interrogatories concern Issue 3.1: Are the proposed near term and interim measures as outlined in the application appropriate?

Request: To produce IESO's analysis of whether series compensation, if used as an interim measure, would result in a shortfall.

Response

The SIA Report for the series compensation has shown that with 30% series compensation installed on the Bruce-to-Longwood and the Longwood-to-Nanticoke 500 kV circuits, the maximum amount of generation capacity that could be accommodated without using generation rejection would be limited to seven Bruce units and all of the committed wind-turbine projects (total capacity 675MW). Please refer to response to Pappas Interrogatory 1 for a copy of the SIA Report.

With this amount of generation capacity incorporated the post-contingency flows on the 500kV circuit N582L, between Longwood TS and Nanticoke SS and on the 230 kV circuits B4V & B5V, between the Bruce Complex and Orangeville TS, would be just within their long-term emergency ratings.

This means that even if the higher levels of series compensation that would be necessary to ensure that eight Bruce units would remain transiently stable were to be installed on the 500 kV circuits, the post-contingency flows would cause them to be severely overloaded.

The use of series compensation, without post-contingency generation, would therefore not allow the eighth Bruce unit to be accommodated.

Powerline Connections INTERROGATORY #134 List 1

Interrogatory

The following interrogatories concern Issue 3.1: Are the proposed near term and interim measures as outlined in the application appropriate?

Request: Besides the near-term and interim measures outlined at the Technical Conference, has HONI made any technical investigation into any other means to bridge the gap in transmission capacity; if so, please outline all measures investigated, those determined feasible, those determined not to be feasible. If HONI has not made any technical investigations of other means to bridge the gap, to advise why.

Response

No. Hydro One relies on the advice of the OPA to determine viable options to bridge the gap in transmission capability, and all investigated measures were discussed in the Technical Conference.

Powerline Connections INTERROGATORY #135 List 1

Interrogatory

4.0 Reliability and Quality of Electricity Service

The following interrogatories concern Issue 4.3: Have all appropriate project risk factors pertaining to system reliability and quality of electricity been taken into consideration in planning this project?

Request: Does the placement of additional transmission capacity along the existing corridor create increased risk that the entire expanded corridor could be affected by the same outage factors, and could that risk be reduced or eliminated by constructing the new line along a different route?

Response

Please refer to response to Board Staff Interrogatory 2.10 ii).

Powerline Connections INTERROGATORY #136 List 1

Interrogatory

4.0 Reliability and Quality of Electricity Service

The following interrogatories concern Issue 4.3: Have all appropriate project risk factors pertaining to system reliability and quality of electricity been taken into consideration in planning this project?

Request: Are there examples of HONI constructing transmission lines that exceed guidelines and standards for reliability and quality of electrical service?

Response

Hydro One's planning standard is to meet and not exceed guidelines and standards relating to reliability and quality of electrical service. Upon request by a customer, and at customer cost, in certain circumstances Hydro One may construct facilities beyond applicable standards; for example, providing two independent sources of supply to a customer where the standard would only require one.

Powerline Connections INTERROGATORY #137 List 1

Interrogatory

5.0 Land Matters

The Following Interrogatories Concern Issue 5.0 Land Matters

Request: Has any consideration been given to land acquisition costs? If so, provide that analysis, including the costs of the lands required, the rate proposed to be paid, and the basis for the calculations.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #138 List 1

Interrogatory

5.0 Land Matters

The Following Interrogatories Concern Issue 5.0 Land Matters

Request: Has HONI factored in the costs of Injurious Affection in its budgeted land costs? If not, why not? If so, provide a breakdown of those estimates in relation to total land costs.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #139 List 1

Interrogatory

5.0 Land Matters

The Following Interrogatories Concern Issue 5.0 Land Matters

Request: Has HONI factored in the costs of damages or expenses that may arise as a result of the expansion of the EMFs associated with the corridor? If not, why not? Are EMFs factored into HONI's cost-benefit analysis at all? If so, where are they considered? Please provide a breakdown of the impact of this factor on the cost-benefit analysis. If not, why not?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #140 List 1

Interrogatory

5.0 Land Matters

The Following Interrogatories Concern Issue 5.0 Land Matters

Request: Has HONI considered the use of narrow-based towers? If not, why not?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #141 List 1

Interrogatory

5.0 Land Matters

The Following Interrogatories Concern Issue 5.0 Land Matters

Request: What is the cost differential between narrow-based towers and conventional towers?

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #142 List 1

Interrogatory

5.0 Land Matters

The Following Interrogatories Concern Issue 5.0 Land Matters

Request: Landowners and power generation entities have entered voluntary agreements concerning the establishment of wind turbine towers and (their serving) facilities. These agreements provide for a royalty or other yearly payment to be made to the landowner. Please provide a summary of all such arrangements that HONI or its consultants are aware of and any analysis which has been done to attribute the royalty or other payments which are made to impacts such as loss of market value and injurious affection as negotiated in these "willing buyer" "willing seller" circumstances.

Response

Please refer to the correspondence from Hydro One dated March 13, 2008 concerning paragraph 3 of Procedural Order 5.

Powerline Connections INTERROGATORY #143 List 1

Interrogatory

5.0 Land Matters

The Following Interrogatories Concern Issue 5.0 Land Matters

Request: Please confirm or correct HONI's advice that between Bruce and Kincardine, there are five privately held properties which would be required and between Kincardine and Milton there are thirty privately held properties which have either a major farm or commercial building or a residence on the expanded right-of-way.

Response

Between the Bruce Nuclear Complex to the easterly limit of the Municipality of Kincardine, there are 12 privately held properties where Hydro One would require property rights. Based on the reference route as filed on March 29, 2007, Hydro One's photo-based mapping assessment indicates there are 30 properties that have either a residence, major farm building or commercial structure on the widened corridor.

Based on a route that incorporates the west-side refinement route in Halton Hills (please refer to the response to Powerline Interrogatory 92), Hydro One's current mapping assessment indicates that there are 26 properties that have either a residence, major farm building or commercial structure on the widened corridor.

Powerline Connections INTERROGATORY #144 List 1

Interrogatory

6.0 Aboriginal Peoples Consultations

Request: Has HONI agreed to pay compensation to any Aboriginal Group on account of land acquisition costs, injurious affection, or damages? If so, identify the group, and provide particulars of the payment or contemplated payment.

Response

No.

Powerline Connections INTERROGATORY #145 List 1

Interrogatory

6.0 Aboriginal Peoples Consultations

Request: Has HONI factored Aboriginal claims, compensation payable and Aboriginal land costs into its cost-benefit analysis and in its consideration of alternatives? If so, please provide a breakdown. If not, why not? Can that be done before the technical conference?

Response

Hydro One has and continues to consult with Aboriginal Groups to discuss the Project and issues of concern that relate to how the Project will affect Aboriginal Groups. As part of this consultation process, consideration is being given to whether and, if so, to what degree, construction of the Project may interfere with rights held or otherwise asserted by identified Aboriginal Groups. Ultimately it is the Crown who possesses the obligation to consider whether and to what degree appropriate accommodations are necessary and in fulfillment of its Constitutional responsibilities.