October 13, 2009

OEB STAFF INTERROGATORIES
CANADIAN NIAGARA POWER INC.
APPLICATION FOR LEAVE TO CONSTRUCT
TRANSMISSION FACILITIES IN THE
NIAGARA FALLS / FORT ERIE AREA
BOARD FILE NO. EB-2009-0283

NOTE: In the following sections, all of the facilities proposed by CNP in its application to the Board, including the facilities in Ontario and in New York are referred to, collectively, as the "Project".

1.0 PROJECT NEED

References: (1) Exh. B, Tab 3, Sch. 1

(2) Exh. B, Tab 1, Sch. 1

Preamble

Page 8 of Ref (1) indicates that:

- the average monthly peak load on CNP's transmission system was 48 MW in 2005, 49 MW in 2007 and 47 MW in 2008;
- the annual peak load was 56 MW in 2008 and exceeded 48 MW since 2002.
- CNP forecasts its load to grow at an annual rate of 0.5%.

Page 2 of Ref (2) provides the rating of the existing transmission line sections related to the Project. It is noted that the load levels indicated above are within the capability of all of the transmission line sections except for the 0.66 km line section between Queen St. Tower in Fort Erie and High Tower in Buffalo. This section is a double circuit line with a rating of 48 MW for each circuit. However, at this time only one of the two circuits is energized.

The Table on page 10 of Ref (1) shows performance data for the CNP transmission system in the period 2002 - 2008.

Pages 11-13 of Ref (1) provide a comparison of the performance of CNP's transmission system with values in a Canadian Electricity Association benchmarking report and Hydro One's Customer Delivery Point Performance Standards ("CDPPS"). It is noted that Hydro One's CDPPS data is provided on a "per delivery point" basis as per Section 4.5 of the Transmission System Code and excludes planned outages. CNP's statistics seem to be on a "total system" basis with no reference to the number and loading of delivery points.

Page 1 of Ref (1) states that the need for the Project is driven by the requirements of the Transmission System Code, which in turn requires the CNP transmission system to satisfy requirements found within the reliability standards of the North American Electric Reliability Corporation ("NERC"), as well as to meet the standards of good utility practice. On pages 3-4, it is stated that:

> *….the CNP Transmission System does not have N-1 contingency at present. By not having N-1 contingency, the system configuration is not in accordance with NERC standards or the Code. In support of its obligations to comply with the Code and NERC standards, CNP has initiated the Project to establish N-1 contingency for its system by upgrading its New York interconnection so as to establish a parallel and continuous supply source.*

Page 1 of Ref (1) also states that "Because there are no viable alternatives, the Project in respect of this reliability concern is non-discretionary."

Board staff would like to get some clarification regarding the need for the Project and the criteria used to establish the need.

Questions / Requests

i. Please explain CNP's rationale for submitting that its transmission system should be able to withstand the N-1 contingency criterion (i.e. uninterrupted supply upon loss of one element). In answering this question please consider: the size of the load (average monthly peak of 47MW and annual peak of 58 MW in 2008); the normal supply from Hydro One has ample capacity for the existing and expected future load; and there is some backup capability from USNG.

ii. Is it CNP's interpretation that NERC Standard TOP-002-2 (Requirement #6) which states that "each Balancing Authority and Transmission Operator shall plan to meet unscheduled changes in system configuration and generation dispatch (at a minimum N-1 Contingency planning)…." applies to CNP's current radial supply to the Fort Erie load? Please explain.

iii. Does the IESO agree with CNP's submission that its transmission system should be able to withstand the N-1 contingency criterion and with CNP's response to (i) and (ii) above? Please provide verification from the IESO, with appropriate explanations.

iv. If meeting of the N-1 contingency criterion was not a requirement, are there other reliability issues/concerns that need to be addressed? If so:

   (a) Please describe the specific reliability issues/concerns that need to be addressed.
   (b) What are the specific criteria or standards on which the need is based?
   (c) Please provide an explanation of how the CNP transmission system does not meet the criteria or standards in (b) including any metrics or threshold levels used to establish the need.

v. Does the IESO agree with CNP's response to (iv) above? Please provide verification from the IESO, with appropriate explanations.

vi. Please explain why only one of the two circuits on the limiting Queen St. Tower to High Tower section of the 115 kV line is energized?

vii. Please provide the performance data for CNP's transmission system similar to that provided on pages 10 & 13 of Ref (1) but with the following changes:

   - Provide the data on a "delivery point" basis rather than the entire system and indicate the average load (in MW) at each delivery point.
   - Exclude planned outages in the analysis.
   - Include 2009 (year to date) in the analysis.

viii. Please describe CNP's process for analyzing its system performance and comparison to Hydro One's CDPPS. Your answer should include the criteria used to establish the need for reliability improvement including any metrics or threshold levels used and the rationale.

ix. What is CNP's rationale for using the average of the 3-year rolling averages instead of using the latest 3-year rolling average for comparison to Hydro One's CDPPS?

x. How would consideration of the latest 3-year rolling average for comparison with Hydro One's CDPPS affect CNP's conclusions with respect to the adequacy of its transmission system?

xi. Seeing that there were no outages on the CNP transmission system in 2007 and 2008 (see Table on page 10 of Ref 1):

(a) What, in CNP's opinion, is the reason for the high level of reliability in 2007 and 2008?
(b) Did CNP undertake any improvements to the transmission system prior to 2007 that likely contributed to the high level of reliability in 2007 and 2008? Please explain.

xii. Does the IESO agree with CNP's criteria from (viii) and (ix) above and its application in determining the adequacy of CNP's transmission system? If not, what criteria does the IESO consider to be appropriate in determining the adequacy of a transmission system such as CNP's? Please provide verification from the IESO, with appropriate explanations.

xiii. In comparing CNP's transmission performance data with the values in the CEA benchmarking report, CNP calculated an outage frequency of 8.75 outages per 100 km per year for CNP's system in the period 2002-2006.

(a) Please calculate CNP's transmission system outage frequency for the latest 4-year period, i.e., 2005-2008. Please exclude planned outages in this analysis.
(b) Does the performance metric from the CEA benchmarking report (1.0534 outages per 100 km per year) include outages to terminal equipment as is included in the CNP performance data? If not, please indicate what the comparable outage rate would be including outages to terminal equipment.
(c) Is the above noted performance metric based on the latest CEA benchmarking report? If not, please provide the outage frequency in the latest report.

xiv. Regarding CNP's statement on page 1 of Ref (1) that "Because there are no viable alternatives, the Project in respect of this reliability concern is non-discretionary":

(a) Is this statement made with respect to Section 5.2.2 of the Ontario Energy Board's "Filing Requirements for Transmission and Distribution Applications"?
(b) Please explain the rationale for classification as a non-discretionary project.
(c) Are the IESO and/or the OPA in agreement with this classification? Please provide verification from the IESO and/or the OPA.

2.0 ALTERNATIVES CONSIDERED

References: (1) Exh. B, Tab 6, Sch. 1

(2) Exh. B, Tab 3, Sch. 1

Preamble

CNP considered 5 alternatives to address the need. Three are variations of the Project and two involve new transmission lines connecting to alternate supply points and on different routes.

Based on the evidence:

- All of the 5 alternatives provide an increased level of reliability to the load in Fort Erie and associated benefits.
- All of the 5 alternatives meet the N-1 Contingency Criterion.
- Only the Project provides additional system-wide benefits to Ontario associated with an increase in the interconnection capability between Ontario and New York.
- The NPV of the Project is $10.4 million over the 30-year study period.
- The NPV of the other alternatives ranges from $ - 3.8 million to about $ -28.5 million.

CNP submitted on page 7 of Ref (2) that a forced outage requiring the initiation of the New York supply through the Emergency Tie Line would involve a 31-step switching process that could take a minimum of 4 hours.

Questions / Requests

i. Does CNP agree with Board staff's approximation that the NPV of the alternatives which do not provide any system-wide benefits to Ontario would be in the order of $ -28.5 million? If not, what is the appropriate NPV?

ii. Assuming that there was no requirement to meet the N-1 contingency criterion, please comment on the feasibility, scope, cost (approximate), expected benefits and impact on the reliability of supply to the Fort Erie load for each of the following options:

(a) Upgrade the 0.66 km limiting transmission line section between Queen St. Tower and High Tower so that it has sufficient capacity to supply the entire Fort Erie load.
(b) Reenergize the existing unenergized circuit in the limiting transmission line section between Queen St. Tower and High Tower so that the two circuits can supply the entire Fort Erie load.
(c) Improve the 31-step switching procedure by procedural and/or equipment changes/additions to reduce the 4-hour switching time, e.g. automated switching or other feasible measures.
(d) Any other alternative(s) that CNP can identify that would improve the reliability of supply to the Fort Erie load.

3.0 PROJECT ECONOMICS AND COST RESPONSIBILITY

References: (1) Exh. B, Tab 2, Sch. 1, Page 2

(2) Exh B, Tab 4, Sch 1

(3) Exh. B, Tab 5, Sch. 1

(4) Exh B, Tab 12, Sch 2, Page 31

Preamble

Based on CNP's Evidence:

- The estimated total cost of the Project is $30.9 million. Of this, $14.9 million is for facilities in Ontario and the remaining $16 million is for facilities in New York.
- Implementation of the Project will result in:
    - benefits associated with improved reliability of supply to the Fort Erie load estimated at $16.1 million (NPV over 30 years))
    - benefits due to Improved maintenance schedules estimated at $3.4 million (NPV over 30 years)
    - Benefits to Ontario due to increased interconnection capability between Ontario and New York estimated at $36.6 million (NPV over 30 years)

- In Ref (1) CNP states that "Though not currently expected, Queen Street Tower and High Tower may need to be replaced to support the new conductors."
- On page 10 of Ref (2), CNP states the following:

> *The Project is rated to provide 150 MW of intertie capacity in both directions at the Niagara interface with New York.*

- The SNC Lavalin report (Ref 4) states the following:

> *The New York to Ontario transfer capability will increase by more than 150 MW with the CNP tie…..*
>
> *The Ontario to New York transfer capability will <u>increase only by a small amount</u> with the CNP tie, since the Ontario to New York transfer is constrained by the 345 kV systems in New York (as identified by the Limiting Circuit in the tables).*
>
> *(underlining added)*

- In calculating the benefits to Ontario ($36.6 million NPV) due to increased interconnection capability between Ontario and New York, CNP assumed that the Project would provide an additional 150 MW of interconnection capability which would avoid the need for 150 MW of new generation capacity. The avoided generation costs were then determined using CDM guidelines which would result in a value of $365.6 million over the life of the Project and reducing this amount by 90% to come up with $36.6 million. (Reducing the $365.6 million amount by 90% seems somewhat arbitrary.)
- the Project relates to network assets and CNP is proposing to pay the entire cost of the Project (estimated at $30.9 million) including the capital contribution that CNP will make to USNG to cover the costs of the work in New York and that this be ultimately added to rate base and recovered through the network charge of the Uniform Transmission Rates.

Board staff wishes to explore the reasonableness of the estimated Project costs and benefits as well as CNP's rationale for its proposal to pay the entire cost of the Project and seek recovery from Ontario ratepayers.

Questions / Requests

i. Please provide cost breakdowns for the estimates shown in Figure 5.1 in Ref (1) for the facilities proposed on the Ontario side and to the extent possible those on the New York side based on the following categories:

- engineering;
- construction;
- equipment and materials
- commissioning:
- contingencies;
- overheads (break down into Direct Overheads and Indirect overheads); and
- AFUDC.

ii. Please indicate the accuracy of the estimates shown in Figure 5.1 in Ref (1).

iii. Has CNP determined yet whether the Queen Street Tower and High Tower need to be replaced to support the new conductors? If it is required, what is the estimated cost of carrying this out?

iv. The $16.1 million benefit associated with the improved reliability of supply to the Fort Erie load is based on a value of lost load (VoLL) of $10,000/MWh and an interruption of the entire load one day every 10 years. The method does not seem to relate to reliability levels before and after the Project is implemented.

(a) How does this method compare with the methodology used by other transmitters in Ontario in evaluating the benefits of improved reliability of transmission systems?
(b) Please comment on the accuracy of the above-noted CNP calculation.
(c) Please comment on the accuracy of CNP's alternate calculation ($11.5 million) which considers the impact on specific customers and customer classes. (This method also does not seem to relate to reliability levels before and after the Project is implemented.)

v. Please explain (with verification from the IESO) the apparent discrepancy in the calculation of the increase in the Ontario – New York interconnection capability between the CNP/IESO and SNC Lavalin calculations referred to in the preamble.

vi. Please confirm (with verification from the IESO) what the appropriate increase in the import and export capability of the Ontario electricity market that should be used in calculating the benefits of the Project.

vii. Please comment on the appropriateness of using CDM Guidelines for evaluating avoided generation in calculating the benefits to Ontario ($36.6 million NPV) associated the increased interconnection capability between Ontario and New York.

viii. Does the IESO and/or the OPA agree with the methodology used by CNP (i.e. using CDM guidelines for avoided generation for valuing additional import capability in Ontario) to determine the value of the increased interconnection capability associated with the Project? Any comments/explanations from the IESO and/or OPA should be included in your reply.

ix. If the IESO and/or OPA do not agree with the methodology in (viii):

(a) please advise what methodology is considered appropriate by the IESO and/or the OPA, including their rationale;
(b) please calculate the economic value of the increased interconnection capability associated with the Project based on the methodology in (a).

x. Since the Project will increase the interconnection capability between Ontario and New York in both directions, and likely benefits both sides, why is CNP proposing to pay the entire cost of the Project, including the work in New York?
xi. Has CNP attempted to negotiate a cost-sharing arrangement with USNG? If it didn't, why not? If it did, what was the outcome and rationale?
xii. Please provide any policies, guidelines and examples of prior practice (both at CNP and other Ontario transmitters) that would support CNP's proposal to pay the entire cost of the Project (including work in New York) and recover the costs from the Ontario electricity ratepayers.
xiii. Please advise what the cost-sharing arrangements were between Hydro One and U.S. jurisdictions (New York and Michigan) when the existing interconnections were established/reinforced. (In answering this, please consult with and provide verification from Hydro One.)

4.0 SYSTEM IMPACT ASSESSMENT (SIA)

References: (1) Exh. A, Tab 3, Sch. 1, Pages 21-22

(2) Exh. B, Tab 9, Sch. 1

(3) Exh. B, Tab 9, Sch. 2

Preamble

CNP submitted a SIA, dated January 17, 2007 and labelled as "DRAFT Report" as well as "Final Report". The report concludes that Notification of Conditional Approval for connection be issued to CNP subject to subject to a list of requirements contained in the SIA.

There is no Notification of Conditional Approval included in the pre-filed evidence (as is generally required in a Section 92 application).

Based on information contained in the SIA:

- the short circuit analysis is not completed;
- the IESO is awaiting short circuit modeling data for the USNG system; and
- CNP is required to provide the data to the IESO to complete the analysis.

There is no evidence to indicate whether the above items have since been completed.

Board staff wishes to obtain information/verification regarding the status of the IESO's SIA and the Notification of Conditional Approval for the Project.

Questions / Requests

i. Please advise whether the SIA report dated January 17, 2007 is the final SIA report or a draft. If it is not final, please provide the final version.
ii. Please provide a signed copy of the IESO's Notification of Conditional Approval for the SIA.
iii. Since the SIA filed is over 2 1/2 years old, please provide verification from the IESO that it is in agreement with the Project as now proposed and provide status of any outstanding requirements it has or new requirements due to changed conditions etc. e.g. status of short circuit studies.
iv. Please confirm that CNP plans to implement all of the IESO's connection requirements in the contained in the SIA and any updates to it.

5.0 CUSTOMER IMPACT ASSESSMENT (CIA)

References: (1) Exh. A, Tab 3, Sch. 1, Pages 21-22

(2) Exh. B, Tab 10, Sch. 1

(3) Exh. B, Tab 10, Sch. 2

Preamble

CNP filed a CIA carried out by Hydro One, dated September 16, 2006 (Ref 2). The CIA indicates that:

- Hydro One carried out a short circuit analysis and concluded that, while the Project would result in a small increase in short circuit levels, the increased short circuit level is still within the capability of the existing facilities.
- Hydro One concluded that the Project is not expected to have a significant impact on the customers in the area.

Questions / Requests

i. Since the CIA filed is over 3 years old, please provide verification from Hydro One that the results of the CIA are still valid and provide the status of any outstanding requirements or new requirements due to changed conditions etc.
ii. Please confirm that any requirements in the current CIA and any updates to it will be implemented.

6.0 ENVIRONMENTAL ASSESSMENTS

References: (1) Exh B, Tab 7, Sch 1

Preamble

CNP submits that, for various reasons mentioned in Ref (1):

- CNP does not expect the Project to trigger any federal environmental assessment requirements.
- CNP "is confident that no provincial environmental assessment requirements will apply to the Project."

Questions / Requests

i. Please provide verification from Environment Canada that no federal environmental assessment requirements will apply to the Project.
ii. Please provide verification from the Ministry of the Environment that no provincial environmental assessment requirements will apply to the Project.
iii. If the federal and/or provincial authorities in (i) and (ii) above indicate that there are environmental requirements, please indicate how CNP plans to fulfill the requirements including the timeframe for completion.

7.0 CNP / USNG OPERATIONAL AGREEMENTS

References: (1) Exh B, Tab 12, Sch 2

Preamble

Ref (1) refers to study carried out by SNC Lavalin as part of New York Independent System Operator's interconnection process. Page i of the reference states the following:

> *The Project allows for a maximum tie flow of 150MW in either direction. CNP is, however, expected to operate the tie largely consistent with its existing operating pattern (i.e. supplying its loads from Hydro One transmission under normal operating conditions and receiving power from NYISO side only when its Hydro One link is outaged) in keeping with its intrautility agreements.*

Board staff wishes to investigate the relevance of the above statement and its implication that power would be flowing into Ontario only when the Hydro One link is outaged. If this is the case, it seems unlikely that Ontario would derive the significant benefits associated with the increased interconnection capability ($36.6 million). Some clarification is required.

Questions / Requests

i. Please explain the relevance of the above noted statement from Ref (1) and whether the significant benefits associated with the increased interconnection capability can be achieved under such restrictions.
ii. Please provide verification from USNG that it is in agreement with the operation of the proposed synchronous tie between Ontario and New York as envisaged by CNP/IESO in a manner that will achieve the reliability benefits for the Fort Erie load as well as the benefits to Ontario associated with the increased interconnection capability.

8.0 LAND RELATED MATTERS AND OTHER APPROVALS

References (1) Exh B, Tab 2, Sch 1, Pages 2-3

Preamble

Based on CNP's evidence:

- The Ontario portion of the Project will take place on or be situated upon lands that already support the CNP Transmission System and which CNP already controls and, as a result no new land is required for the Project.
- Station #18 may need to be expanded by a minimal amount in order to accommodate the phase shifting transformer and voltage regulator.

Questions / Requests

i. Please provide a list of all outstanding approvals and permits needed to complete construction of the proposed facilities.
ii. Is CNP required to negotiate/renegotiate easement agreements with any of the affected property owners? If so, have the property owners been presented with a form of easement agreement? Please provide copies of any forms of easement agreements that have been or will be presented to the affected landowners.
iii. Are there any landowner issues/concerns to be resolved with respect to the expansion of Station #18? If so, what is the status including CNP's plan and expected timing for resolution?
iv. Are there any other outstanding landowner issues/concerns that need to be addressed? If so, what is the status including CNP's plan and expected timing for resolution?

9.0 ABORIGINAL PEOPLES CONSULTATIONS

References (1) Exh. B, Tab 6, Sch 1, Page 22

Preamble

There is no mention in the evidence regarding any aboriginal lands that may be affected by the Project or any consultations with any Aboriginal group. Ref (1) mentions Aboriginal involvement in other alternatives that were considered and rejected by CNP.

Board staff requires certain information/confirmation from CNP regarding potential impacts of the Project on any Aboriginal groups in Ontario.

Questions / Requests

i. Has CNP made inquiries to determine if there are Aboriginal groups that may be affected by the Project?
ii. If there are Aboriginal groups that are affected by the Project, has CNP consulted with them? If so please indicate:

    (a) when and how contact was first initiated;
    (b) the individuals within the Aboriginal groups who were contacted, and their position in or representative role for the group; and

(c) a listing, including the dates, of any phone calls, meetings and other means that may have been used to provide information about the project and to hear any interests or concerns of Aboriginal groups with respect to the project.

iii. Please provide any relevant written documentation regarding consultations, such as notes or minutes that may have been taken at meetings or from phone calls, or letters received from, or sent to, Aboriginal groups.

iv. Please provide any relevant information gathered from or about the Aboriginal groups as to their treaty rights, any filed and outstanding claims or litigation concerning their treaty rights, treaty land entitlement or aboriginal title or rights, which may potentially be impacted by the project.

v. Please identify any specific issues or concerns that have been raised by Aboriginal groups in respect of the Project and, where applicable, how those issues or concerns will be mitigated or accommodated.

vi. Please explain whether any of the concerns raised by Aboriginal groups with respect to the Project have been discussed with any government department or agencies, and if so, identify when contacts were made and who was contacted.

vii. Please provide details of any known Crown involvement in consultations with Aboriginal groups in respect of the Project.

viii. If CNP has not made inquiries to determine if there are Aboriginal groups who may be affected by the Project, please advise what CNP's intentions are with respect to Aboriginal consultations as to process and expected timing.