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Vice President and Chief Regulatory Officer
Regulatory Affairs



BY COURIER

December 3, 2009

Ms. Kirsten Walli
Secretary
Ontario Energy Board
Suite 2700, 2300 Yonge Street
P.O. Box 2319
Toronto, ON.
M4P 1E4

Dear Ms. Walli:

EB-2009-0283 - Canadian Niagara Power Inc. S92 - Fort Erie/Niagara Falls Area - Hydro One Networks Responses to Supplementary Interrogatories

Please find attached Two (2) hard copies of responses provided by Hydro One Networks to the Ontario Energy Board supplementary interrogatory questions.

The Interrogatories have been filed using the Board's Regulatory Electronic Submission System (RESS) and the proof of successful submission slip is attached.

Sincerely,

ORIGINAL SIGNED BY SUSAN FRANK

Susan Frank

- c. Mr. Angus Orford, Canadian Niagara Power Inc.
- Mr. Douglas Bradbury, Canadian Niagara Power Inc.
- Mr. Charles Keizer, Torys LLP
- EB-2009-0283 Intervenors (Electronic only)

**Ontario Energy Board (Board Staff) Supplemental INTERROGATORY #1 List 1
for Hydro One Networks Inc.**

Interrogatory

References: (1) CNP Responses to Board Staff Interrogatories, Page 7
(2) CNP Responses to Hydro One Interrogatories, Page 4

Preamble:

In Ref (1) CNP has submitted that:

CNP's belief is that, for a system of the size and nature of CNP's transmission system, serving end-users with the diversity and economic significance of those served by CNP's system, good utility practice demands that such system have the ability to withstand the loss of one element such that a readily available secondary supply is available to provide uninterrupted service in the event of the unplanned loss of the system's primary supply.

In Ref (2) Hydro One has submitted that:

There are three existing interconnection facilities between the Hydro One transmission system in Queenston, Ontario and the U.S. National Grid system which are operating below capacity.

Question:

SI-21 Please provide a list showing the existing 115 kV lines in the Hydro One system that supply a total load that is less than 75 MW and for which the N-1¹ contingency criterion is met. The list should include (i) line designations, (ii) the length of the line(s) involved; and (iii) total load supplied (MW).

Response

Hydro One's 2-circuit 115 kV lines that have N-1 contingency all have connected load with aggregate peaks >75MW, as such we could not identify any cases that met the conditions requested.

¹ Refers to a system for which a single contingency will not result in the loss of supply, i.e., uninterrupted supply following a single contingency.

**Ontario Energy Board (Board Staff) Supplemental INTERROGATORY #2 List 1
for Hydro One Networks Inc.**

Interrogatory

References: (1) CNP Responses to Board Staff Interrogatories, Page 7
(2) CNP Responses to Hydro One Interrogatories, Page 4

Preamble:

In Ref (1) CNP has submitted that:

CNP's belief is that, for a system of the size and nature of CNP's transmission system, serving end-users with the diversity and economic significance of those served by CNP's system, good utility practice demands that such system have the ability to withstand the loss of one element such that a readily available secondary supply is available to provide uninterrupted service in the event of the unplanned loss of the system's primary supply.

In Ref (2) Hydro One has submitted that:

There are three existing interconnection facilities between the Hydro One transmission system in Queenston, Ontario and the U.S. National Grid system which are operating below capacity.

Question:

SI-22 Please provide a list showing the existing 115 kV lines in the Hydro One system that supply a total load that is less than 75 MW and for which the N-1 contingency criterion is not met. The list should include (i) line designations, (ii) the length of the line(s) involved; (iii) total load supplied (MW) and (iv) whether there is a backup supply available in the event that the normal supply is interrupted.

Response

The table below contains a sample of lines meeting the conditions requested. Due to the large number of lines that exist in the Hydro One system, a comprehensive list was not prepared, but instead a sample intended to show usual Hydro One practice was prepared.

Examples of 115 KV Single Circuits < 75 MW not meeting N-1 Contingency Criterion

Circuit	Length (km)	Peak (MW)	Comments
61M18	35	53	No restoration is possible from an alternate source.
B8W	6	23	Partial load restoration in more than 4 hours depending upon the contingency and the circuit loading.
D10H	101	59	Normally Open (N.O.) point between Elmira TS and Palmerston TS. – Partial load restoration in more than 4 hours depending upon the contingency and the circuit loading.
L7S	122	97	N.O. point between L7S and D8S- Partial load restoration in more than 4 hours depending upon the contingency and the circuit loading.
N5K	40	51, <75	N.O. point from alternative supply. Partial load restoration in more than 4 hours depending upon the contingency and the circuit loading.
S2N	45	70	Partial load restoration in more than 4 hours depending upon the contingency and the circuit loading.
W8T/WT1A/ WT1T	67	115/10/102	These three circuits supply several stations with normally open points. Partial load restoration in more than 4 hours depending upon the contingency and the circuit loading.
C2P	15	36	No restoration is possible from an alternate source.
D1A	19	66.1 (9) <75	Supplies customer owned stations
Q11S		53	Some stations are supplied by this circuit only while others are also supplied by companion circuit Q12S.
Q12S		50	Some stations are supplied by this circuit only while others are also supplied by companion circuit Q11S.
Q2AH		131	Line operated with N.O. point, two stations supplied from one Allanburg TS side, one station supplied from Beach TS side. Partial load restoration in more than 4 hours depending upon the contingency and the circuit loading.
Q2A	20	25	Partial load restoration in more than 4 hours depending upon the contingency and the circuit loading.
L2M	118	63	Partial load restoration in more than 4 hours depending upon the contingency and the circuit loading.

**Ontario Energy Board (Board Staff) Supplemental INTERROGATORY #3 List 1
for Hydro One Networks Inc.**

Interrogatory

References: (1) CNP Responses to Board Staff Interrogatories, Page 7
(2) CNP Responses to Hydro One Interrogatories, Page 4

Preamble:

In Ref (1) CNP has submitted that:

CNP's belief is that, for a system of the size and nature of CNP's transmission system, serving end-users with the diversity and economic significance of those served by CNP's system, good utility practice demands that such system have the ability to withstand the loss of one element such that a readily available secondary supply is available to provide uninterrupted service in the event of the unplanned loss of the system's primary supply.

In Ref (2) Hydro One has submitted that:

There are three existing interconnection facilities between the Hydro One transmission system in Queenston, Ontario and the U.S. National Grid system which are operating below capacity.

Question:

SI-23 In situations where there is a back-up supply available, please comment on the length of time needed to restore supply upon the loss (forced outage) of the primary supply.

Response

Please refer to the comments section of the table included in Hydro One supplemental interrogatory response to OEB #2.

**Ontario Energy Board (Board Staff) Supplemental INTERROGATORY #4 List 1
for Hydro One Networks Inc.**

Interrogatory

References: (1) CNP Responses to Board Staff Interrogatories, Page 7
(2) CNP Responses to Hydro One Interrogatories, Page 4

Preamble:

In Ref (1) CNP has submitted that:

CNP's belief is that, for a system of the size and nature of CNP's transmission system, serving end-users with the diversity and economic significance of those served by CNP's system, good utility practice demands that such system have the ability to withstand the loss of one element such that a readily available secondary supply is available to provide uninterrupted service in the event of the unplanned loss of the system's primary supply.

In Ref (2) Hydro One has submitted that:

There are three existing interconnection facilities between the Hydro One transmission system in Queenston, Ontario and the U.S. National Grid system which are operating below capacity.

Question:

SI-24 Has there been any consideration by Hydro One and/or others into utilizing the existing interconnections between the Hydro One system at Queenston and the US National Grid ("USNG") system to gain additional interconnection capability? Please explain.

Response

Yes, the use of the existing interconnections between Hydro One Networks and US National Grid have been considered for increased interconnection capacity between our systems. Hydro One Networks and US National Grid have an established Asset Owners Committee that usually meets annually. This subject has been raised at several of the recent meetings. US National Grid has responded at these meetings that they have no interest in pursuing this increased capacity at this time.

**Ontario Energy Board (Board Staff) Supplemental INTERROGATORY #5 List 1
for Hydro One Networks Inc.**

Interrogatory

References: (1) CNP Responses to Board Staff Interrogatories, Page 7
(2) CNP Responses to Hydro One Interrogatories, Page 4

Preamble:

In Ref (1) CNP has submitted that:

CNP's belief is that, for a system of the size and nature of CNP's transmission system, serving end-users with the diversity and economic significance of those served by CNP's system, good utility practice demands that such system have the ability to withstand the loss of one element such that a readily available secondary supply is available to provide uninterrupted service in the event of the unplanned loss of the system's primary supply.

In Ref (2) Hydro One has submitted that:

There are three existing interconnection facilities between the Hydro One transmission system in Queenston, Ontario and the U.S. National Grid system which are operating below capacity.

Question:

SI-25 Please provide any available information regarding:

- additional interconnection capacity (MW) that may be available between the Hydro One system at Queenston and the USNG system; and
- any upgrades/modifications needed to achieve the additional capacity and approximate costs involved.

Response

There are three existing interconnections at Queenstown that are currently underutilized, namely:

- 1) BL104 – 115kV Beck 1 SS x Lockport
- 2) BSC105 – 69 kV Parks TS x Station C x Gardenville
- 3) BSH106 – 115 kV Beck 1 SS x Harper TS

1 BL104 was used prior to market opening to isolate generation located at the Beck 1 GS
2 onto National Grid system. It has not been used since market opening in 1999, but is still
3 in operable condition. BSC105 and BSH106 are former 25Hz interconnection circuits
4 that have not been used since National Grid retired their 25 Hz system in January 2008.
5 They would require work in both the Hydro One system and National Grid system to
6 make them operable.

7
8 BL104 could be restored to about 45 MW capability with minor work (<\$500k) or 160
9 MW with the installation of a Phase angle regulator (\$50M).

10
11 BSC105 could be restored to 45 MW with modest station work (bus reconfiguration, one
12 115 kV circuit breaker and a 115-69kV transformer) costing \$10M plus an unknown
13 amount of work in the National Grid system.

14
15 BSH106 could be restored to 45 MW with modest station work (bus reconfiguration and
16 up to two 115 kV circuit breakers) costing \$5M or 160 MW with the installation of a
17 phase angle regulator (\$50M) plus an unknown amount of work in the National Grid
18 system.