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Susan Frank

Vice President and Chief Regulatory Officer
Regulatory Affairs

BY COURIER

December 21, 2006

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

Dear Ms. Walli:

EB-2006-0242 – Hydro One Networks' Section 92 Southern Georgian Bay Transmission Reinforcement Application – Interrogatory Responses

As required by Procedural Order 1, I am attaching nine (9) copies of Hydro One Networks' interrogatory responses. An electronic copy (text searchable Acrobat format on CD) will be emailed to the Board Secretary at Boardsec@oeb.gov.on.ca and to IESO.

Sincerely,

A handwritten signature in cursive script, appearing to read "Susan Frank".

Susan Frank

Attach.

1
2 (d) Federal Approvals

3
4 Under the *Canadian Environmental Assessment Act*, a federal environmental
5 assessment is required if:

- 6
7 1. A federal authority is the proponent of the project;
8 2. A federal authority funds the project in whole or in part;
9 3. Federal lands are required for the project; or
10 4. The project requires a federal authority to exercise a regulatory duty that is
11 described in the *CEA Act Law List Regulation*.

12
13 The Canadian Environmental Assessment Agency (CEAA) has been contacted as
14 part of the agency consultation process for this project, and they are acting as the
15 co-ordinator for federal responses. A Project Description has been sent to their
16 Toronto office at their request.

17
18 Email correspondence with CEAA to date indicates that a federal environmental
19 assessment trigger is not expected.

20
21 **Additional Approvals/Permits**

22
23 The following specific approvals/permits/agreements apply to the SGBTR
24 project:

25
26 It is anticipated that Hydro One can reach agreement with Canadian Pacific by
27 May 2007, for the two rail crossings along the transmission line.

28
29 Review of the project under the *Navigable Waters and Protection Act* from
30 Transport Canada, specifically for clearances over the Nottawasaga River. Hydro
31 One anticipates an agreement by May, 2007.

32
33 A clearance letter (as a result of Stage 3 Archaeological Assessment) from the
34 Ontario Ministry of Culture – Stage 3 work to be completed by end of April,
35 2007, expect clearance by June, 2007.

36
37 Work permits from the Ontario Ministry of Natural Resources - currently
38 identifying access requirements, permits expected May - September, 2007.

39
40 Filing a Notice of Project with the Ontario Ministry of Labour - expected by
41 April, 2007.
42

1 Permits for fill, construction, and/or alteration to waterways/shorelines issued by
2 the Nottawasaga Valley Conservation Authority - currently identifying access
3 requirements, permits expected May - September, 2007.
4

5 Entrance permits for construction access roads from the municipalities of
6 Clearview, Essa and Springwater - currently identifying access requirements,
7 permits expected by May, 2007.
8

9 Demolition permit for removal of existing Control Room and Maintenance
10 Garage buildings, Building permit for new Control and Maintenance building at
11 Stayner TS from Clearview Township – expected by May, 2007.
12

13 Permit to Take Water from the Ontario Ministry of the Environment for
14 construction activities at Stayner TS – currently undertaking hydrogeological
15 assessment, permit expected by May, 2007.
16

17 Certificate of Approval from the Ontario Ministry of the Environment for
18 transformer spill containment and sub-surface drainage at Stayner TS – currently
19 working on final station design, certificate expected May, 2007. Certificate of
20 Approval from the Ontario Ministry of the Environment for air emissions (noise
21 from new transformers) – transformers have not been ordered, certificate expected
22 by May, 2008.
23
24

1 **Ontario Energy Board (Board Staff) INTERROGATORY #2**

2
3 **Interrogatory**

4
5 Ref.: Exhibit A/Tab1/Schedule 1/page 2/para.1
6

7
8 **Preamble:**

9
10 The second bullet refers to replacing the existing step-down transformers with higher
11 capacity transformers to serve local load growth.
12

13 **Questions:**

- 14
15 (a) Please confirm that the replacement transformers will not only be higher capacity,
16 but will also be rated 230/44kV, rather than 115/44kV.
17
18 (b) What will be the MVA rating of the 230/44kV transformers?
19
20 (c) What will be the MVA rating of the 230/115kV autotransformers?
21
22

23 **Response**

- 24
25 (a) The replacement transformers at Stayner TS will indeed be rated 230/44 kV.
26
27 (b) The MVA rating of the new 230/44 kV transformers at Stayner will be 125 MVA.
28
29 (c) The MVA rating of the new 230/115 kV autotransformer at Stayner TS will be
30 125 MVA.
31

1 **Ontario Energy Board (Board Staff) INTERROGATORY #3**

2
3 **Interrogatory**

4
5 Ref.: Exhibit A/ Tab 1/Schedule 1/page 4
6

7
8 **Preamble:**

9
10 Letters of support have been received from all participants in the 2004 Simcoe County
11 Load Study, except for Honda, a load customer.
12

13 **Questions:**

14
15 Please confirm that the reason Honda did not provide such a letter was because they are
16 not affected by the Essa x Stayner deficiencies, nor assisted by the Essa x Stayner
17 proposal in the application.
18

19
20 **Response**

21
22 A letter of support was not provided by Honda Canada because they are not affected or
23 assisted by the Essa x Stayner proposal in the application.
24

25 The joint study, as stated in Exhibit B, Tab 1, Schedule 3 on page 2 under the heading of
26 "Simcoe County Joint Studies - 2004", confirmed the need to reinforce the transmission
27 system in the Southern Georgian Bay Area. The study included the load forecast for the
28 area and several separate proposals for transmission reinforcements to meet different and
29 independent requirements, including, in particular, the need to build a new step-down
30 transformer station in order to satisfy the high load growth in southern Simcoe County,
31 where Honda Canada is located. Honda Canada is presently being fed by Alliston TS
32 where the transformers are currently at capacity and local area load is forecasted to grow.
33 This need was addressed by building a new transformer station Everett TS, near Alliston
34 TS.
35

1 **Ontario Energy Board (Board Staff) INTERROGATORY #4**

2
3 **Interrogatory**

4
5 Ref.: Exhibit A/Tab 1/Schedule 1/Page 3/para.8
6

7
8 **Preamble:**

9
10 Since this application involves a modification to the IESO-administered Grid, an SIA is
11 required (at paragraph 4.3.8 of the Board's Filing Requirements issued November 2006).
12 Paragraph 4.3.9 also indicates that a CIA must be provided if a System Impact
13 Assessment is required, and that a CIA need not be carried out if no SIA is required.
14 Instead of the usual Customer Impact Assessment, Hydro One has provided customer
15 impact information from a joint utility planning study.
16

17 **Questions:**

- 18
19 (a) Please explain why a CIA has not been filed in accordance with the Board's
20 requirements.
21
22 (b) Please indicate how the Load Study differs in technical assessment from the
23 classical Customer Impact Assessment?
24
25 (c) What additional work or studies would normally be provided by a CIA?
26
27 (d) Please provide reasons why Hydro One should not be required to provide a
28 normal CIA.
29
30 (e) Has Hydro One studied the new short circuit levels? Are there any implications
31 for customers from new fault levels which might be present at Stayner or
32 elsewhere?
33
34

35 **Response**

- 36
37 (a) A CIA was not filed since all of the transmission customers in the area that would
38 normally be provided with the results of a CIA study participated in the joint
39 utility study and are therefore aware of the recommended transmission plan and
40 the impact on the reliability to their delivery point.

1 (b) The Load study looks at the impact to the customers' delivery points for a time
 2 period of 10 years into the future whereas a CIA study looks only at the impact on
 3 the projected in-service date.

4
 5 (c) A classical CIA study also includes the impact of fault levels at the customer
 6 delivery point.

7
 8 (d) Hydro One should not be required to provide a classical CIA study because no
 9 further information is provided other than what already is available from other
 10 sources including the Load Study and IESO's SIA.

11
 12 The Load study provides all of the voltage decline data that would normally be
 13 provided in a CIA.

14
 15 The IESO SIA (Exhibit B, Tab 6, Schedule 3) provides fault levels at the 230 kV
 16 and 115 kV buses at the customer delivery points for both the existing condition
 17 and with the proposed transmission facilities in service. These are available on
 18 Table 7, page 19, of the IESO SIA report.

19
 20 Hydro One conducted an engineering study to ensure that the Hydro One-owned
 21 equipment at the customer delivery points would be within rating. The results of
 22 this study are reproduced in the table below.

23
 24 **Fault Levels in kA**

Station	Existing		With Reinforcement		% difference	
	3-Phase	LG	3-Phase	LG	3-phase	LG
Stayner 115 kV	5.0	3.3	6.0	6.5	+20%	+97%
Stayner 230 kV	-	-	11.3	9.1	-	-
Stayner 44 kV	6.9	8.4	6.0	5.5	-14%	-35%
Meaford 44 kV	5.4	6.7	5.5	6.8	+2%	+1%

25
 26 The engineering studies show that the fault levels at the 44 kV customer delivery
 27 points are reduced in the case of Stayner TS or stay essentially the same in the
 28 case of Meaford TS. However, all of the 44 kV fault levels are well within the 20
 29 kA standard of the TSC.
 30

- 1 (e) Hydro One, in its engineering studies, did investigate the impact of these fault
2 levels, and they are provided in the answer to part d). These fault levels would
3 present no adverse risk to the customers.
4

1 The Parkway x Richmond Hill line uses costlier steel pole structures and a larger
 2 conductor size than that proposed for the SGB project. The Hurontario x Cardiff
 3 is costlier because of the need to use a larger conductor size and special types of
 4 structures along the Parkway Belt and in close proximity to the Pearson Airport.
 5

Estimated Cost of Line Work (\$ '000)

	Southern Georgian Bay Reinforcement	Hurontario SS x Cardiff TS **	Niagara Area Reinforcement	Parkway TS x Richmond Hill MTS
	2 circuit 230 kV Line	2 circuit 230 kV Line	2 circuit 230 kV Line	2 circuit 230 kV Line
Length (km)	27.0	4.2	76.0	7.0
In Service Date	2009	2009	2007 ?	2005
Engineering (incl PM)	1,400	425	3,000	500
Procurement	20,000	2,505	44,900	5,000
Construction	15,500	3,280	23,900	4,900
Commissioning	100	-	100	-
Land	-	-	2,500	-
Contingencies	3,000	900	11,500	1,100
Subtotal	40,000	7,110	85,900	11,500
Overhead	5,250	970	14,500	1,600
AFUDC	2,750	345	7,700	700
Total Line Work	48,000	8,425	108,100	13,800

6 ** Costs are for Hurontario x Cardiff TS only, and exclude the cost of replacing skywire on other
 7 transmission lines connected to Hurontario SS, which is also a part of the overall Hurontario
 8 project.
 9

10 (b) Regarding the request for similar information for assessing the installation of an
 11 autotransformer and station transformers, no past projects exist with similar
 12 construction conditions and engineering design to the proposed work at Stayner
 13 TS. The combination of work to be done at Stayner TS is quite unique to other
 14 projects carried out in the past due to project-specific conditions at site (e.g.

1 limited site space, the need to maintain service during construction, contaminated
 2 soil issues, etc). However, in an attempt to be helpful the following table provides
 3 examples of work that included autotransformers or transformers in other
 4 projects. It must be emphasized that these numbers are not comparable.
 5

Estimated Cost of Station Work (\$ '000)

	Stayner TS Network	Cambridge Preston TS Network	Stayner TS Connection	Midhurst TS Connection
		1 x 230-115 kV autotransformer		2 x 230-44 kV transformers & 44 kV switching
In Service Date	2009	2007	2009	2004
Project Management	200	133	175	350
Engineering	1,125	672	875	940
Procurement	8,525	6,191	8,475	7,370
Construction	4,400	1,631	3,800	2,980
Commissioning	400	332	675	1,330
Contingencies	1,200	206	1,000	-
Subtotal	15,850	9,165	15,000	12,970
Overhead	2,075	1,467	1,975	2,080
AFUDC	1,100	478	1,025	560
Total Station Work	19,025	11,110	18,000	15,610

1 **Ontario Energy Board (Board Staff) INTERROGATORY #6**

2
3 **Interrogatory**

4
5 Ref.: Exhibit B/Tab 4 /Sch.2/ Tables 2,3,4
6

7
8 **Preamble:**

9
10 Clarification of cost information
11

12 **Questions:**

- 13
14 (a) For each of the tables please provide a break down of Overheads into "Direct
15 Overheads" and "Indirect Overheads".
16 (b) For each of the tables please provide the detailed calculation of AFUDC.
17 (c) For each of Tables please indicate the following:
18 (i) Items that will be subject to competitive bidding;
19 (ii) Items that will be subcontracted out without competitive bidding;
20 (iii) Items that will be neither competitively bid nor subcontracted out;
21 (iv) The reasons why the items listed under iii) are neither subcontracted
22 out nor competitively bid?
23
24
25

26 **Response**

- 27
28 (a) All overhead costs allocated to the project are for asset management and corporate
29 services costs. These costs are charged to capital projects through a standard
30 overhead capitalization rate. As such they are considered "Indirect Overheads".
31 Hydro One does not allocate any project activity to "Direct Overheads" but rather
32 charges all other costs directly to the project.
33
34 (b) Per Tables 2 and 3 of Exhibit B, Tab 4, Schedule 2, \$5,250k of AFUDC has been
35 included in the total project costs of \$92.0 million. The AFUDC amount is
36 derived by applying Hydro One's forecast average cost of long-term debt to the
37 project's forecasted monthly cash flows and the carry-forward closing balance
38 from the preceding year. The forecast AFUDC rates are:
39 2006 6.3%
40 2007 5.9%
41 2008 5.8%
42 2009 5.9%

- 1 (c)
- 2 (i) All permanent equipment & materials, supplies, consumable materials,
- 3 most transport & work equipment, surveys and geotechnical
- 4 investigations are competitively bid.
- 5 (ii) In accordance with Company purchasing policy, no items over \$6,000
- 6 in value can be subcontracted without competitive bidding, unless
- 7 specific permission is given.
- 8 (iii) There are no material items that will be neither be competitively bid
- 9 nor contracted out. The majority of engineering, commissioning and
- 10 construction labour are performed by Hydro One regular employees
- 11 and casual construction trades and therefore do not require a bidding
- 12 process.
- 13 (iv) These services are generally provided by Hydro One regular
- 14 employees and casual construction trade as provided under Hydro
- 15 One's labour agreements with its unions. These groups have the
- 16 specific experience and knowledge of the Hydro One power system
- 17 facilities to carry out this work safely and efficiently.
- 18
- 19

1 **Ontario Energy Board (Board Staff) INTERROGATORY #7**

2
3 **Interrogatory**

4
5 Ref.: Exhibit B, Tab 4, Schedule 3, page 6, Table 1

6
7
8 **Preamble:**

9
10 Regarding the Discounted Cash Flow Analysis for the Network Pool

11
12 **Questions:**

- 13
14 (a) Please explain why the Income tax is indicated as a positive amount until the end
15 of 2029 and after that negative.
16
17 (b) Please confirm that the LCT refers to Large Corporation Tax, and that it is 0% in
18 the line titled "Income taxes (incl LCT)"
19
20
21

22 **Response**

- 23
24 (a) An income tax credit (positive amount indicating cash inflow) is received until the
25 end of 2029 as the Capital Cost Allowance (CCA) in each year to that point
26 exceeds yearly Net Revenues before taxes (which excludes CCA deduction),
27 leading to a loss before taxes and a tax credit. Subsequent to that point, the
28 annual amount of Net Revenues before taxes exceeds the CCA deduction and
29 income tax is paid (negative amount indicating cash outflow).
30
31 (b) Confirmed -- LCT refers to Large Corporation Tax and it is 0%.

1 **Ontario Energy Board (Board Staff) INTERROGATORY #8**

2
3 **Interrogatory**

4
5 Ref: Exhibit B/Tab 6/Sched7/page 4/paragraph 2.3
6

7
8 **Questions:**

- 9
10 (a) Please provide an update on the consultation with First Nations.
11
12 (b) Are there are any land claims issues which might affect the projects schedule?
13
14 (c) Are there are any other issues which might affect the project schedule? Indicate
15 how issues have been resolved.
16

17
18
19 **Response**

- 20
21 (a) Consultation has commenced with the Six Nations Confederacy regarding the
22 Nan Fan Treaty area, where the project is located. As Hydro One retains existing
23 easement rights for its transmission line right-of-way, our discussions relate only
24 to the terms and conditions Hydro One has under its easement agreements.
25
26 (b) No
27
28 (c) At present, there are no issues. Ongoing consultation and discussion continue
29 with the Six Nations Confederacy relating to the Southern Georgian Bay project
30 and if any issues arise Hydro One will work towards immediate resolution of
31 them.