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Susan Frank

Vice President and Chief Regulatory Officer
Regulatory Affairs

BY COURIER

March 12, 2008

Mr. Peter T. Fallis
Fallis, Fallis & McMillan
195 Lambton Street E
Durham ON N0G 1R0

Dear Mr. Fallis:

EB-2007-0050 – Hydro One Networks' Section 92 Bruce - Milton Transmission Reinforcement Application – Hydro One Networks' Response to Interrogatory Questions from Fallis, Fallis & McMillan

I am attaching an electronic copy of the responses to the interrogatory questions of Fallis, Fallis & McMillan. The paper copy will be sent for overnight delivery by Purolator on March 13, 2008.

Intervenors and the OEB are being provided electronic copies by email today. CDs are available on request and these responses will be available for download from the Hydro One Networks regulatory website.

Sincerely,

ORIGINAL SIGNED BY ANDREW PORAY FOR SUSAN FRANK

Susan Frank

- c. Kirsten Walli, Ontario Energy Board
EB-2007-0050 Intervenors (by email)
M. Heinz, Ontario Power Authority (by email)

Fallis INTERROGATORY #1 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

Ref. Bruce Power New Build Project -for Bruce "C" - Application for construction at the Bruce of a 4,000 MW - 4 Nuclear Reactor Power Generation system - as submitted to the Canadian Nuclear Safety Commission in December of 2006, with a request to approve a full 3 year environmental impact study;

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Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

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2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1),that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction ofthe new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eights
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission of committed or projected
16 wind-generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 ofthe Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels ofthe existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

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26 An Assessment of the Adequacy of the Generation and Transmission Facilities to Meet
27 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
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30 This Report was prepared by IESO in August 1995, contemplating the return to service
31 ofUnits 1 & 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
34 Govt's coal shutdown timeframe, (P. iii).

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37 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
38 shunt capacitor and a conversion ofcertain Nanticoke Units to synchronous condenser
39 should be sufficient to enhance transfer capability of the existing transmission facilities to
40 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
41 transmission line, (P. 27).

42
43 Preliminmy IESO studies indicate that the proposed 500KV series capacitors on the lines
44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.I Douglas Point Nuclear Reactor

- 5
6
7 a) What was the original commissioning 'in-service' date, (approx. 1968,)? and
8
9 b) what was the de-commissioning 'out-of-service' date, (approx. 1984), of the
10 original Douglas Point Nuclear Power Plant located at Douglas Point in Bruce
11 County, ("Douglas Point Reactor") ?
12
13

14 *Response*

15
16 As advised in the letter from Hydro One's council dated of February 26, 2008, the
17 requested information concerning the historical operations of the Douglas Point nuclear
18 reactor is not available.
19

Fallis INTERROGATORY #2 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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13 transmission lines, existing or projected, nor makes any recommendations for the
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33 identifying the timing and requirements for system changes needed to meet the Ont.
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1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.I Douglas Point Nuclear Reactor
5

6
7 What was the actual maximum electrical generation capacity, expressed in MW/h, of the
8 Douglas Point Reactor which had an original design capacity of 200MW/h ?
9

10
11 *Response*
12

13 As advised in the letter from Hydro One's council dated of February 26, 2008, the
14 requested information concerning the historical operations of the Douglas Point nuclear
15 reactor is not available.
16

Fallis INTERROGATORY #3 List 1

Interrogatory

Issues:

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- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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7 KV line will have no materially adverse effect on the IESO-controlled grid.

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10 intended to allow additional generating capacity to be incorporated beyond the eight
11 units at the Bruce complex and all of the committed wind turbine projects...

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14 the Bruce Complex or elsewhere in grid system the any of the committed or projected
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3 emanating from the Bruce Complex should sufficiently enhance the transfer capability of
4 the existing transmission facilities to allow the additional capacity at Bruce GS to be
5 incorporated without the need for any new transmission lines

6
7 A.1 Douglas Point Nuclear Reactor

8
9 From the 'in-service' date of commissioning of the Douglas Point Reactor to the 'out-of
10 service' date of decommissioning of the Douglas Point Reactor, through which
11 Transmission Line(s) was/were transmitted the power generated from the Douglas Point
12 Reactor before the generation of electrical power from any of the nuclear power
13 generation Units at either Bruce 'A' or Bruce 'B' at the Bruce facility, ?

14
15
16 Response

- 17
18 • 1968 to October 1975 -- Through Transmission circuits B4V and B5V
19
20 • October 1975 to October 1977 -- Through Transmission circuits B4V, B5V, B22D,
21 B23D
22
23 • October 1977 to April 1979 -- Through transmission circuits B4V, B5V, B22D,
24 B23D, B27S, B28S
25
26 • April 1979 to 1983 -- Through transmission circuits B4V, B5V, B22D, B23D, B27S,
27 B28S, B20P, B24P
28
29 • 1983 TO 1984 -- Through transmission circuits B4V, B5V, B22D, B23D, B27S,
30 B28S, B20P, B24P, B560M, B561M
31

Fallis INTERROGATORY #4 List 1

Interrogatory

Issues:

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- 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?
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44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.I Douglas Point Nuclear Reactor

5
6 a) Was/were the Transmission Line(s), through which was transmitted the power
7 generated from the Douglas Point Reactor, constructed specifically to transmit the
8 power generated from the Douglas Point Reactor to the Ontario Grid, and

9
10 b) if not, why not.

11
12
13 Response

14
15 The transmission lines used to transmit power generated at the Douglas Point Reactor
16 were not dedicated to serve this purpose alone. As is the nature of transmission
17 networks, circuits also support grid access and transmission of other generation available
18 at the Bruce area as well as providing electricity service to local load requirements from
19 the Douglas Point TS.

Fallis INTERROGATORY #5 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.1 Douglas Point Nuclear Reactor

5
6 What was the maximum Voltage transmission capacity of the Transmission Line(s) that
7 transmitted the electrical power generated from the Douglas Point Reactor?

8
9
10 *Response*

11
12 Prior to 1983 the maximum voltage was 230 kV. After 1983 the maximum voltage was
13 500 kV.

Fallis INTERROGATORY #6 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
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1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.I Douglas Point Nuclear Reactor

- 5
6 a) From what municipal starting location and what municipal ending location
7 was/were constructed the Transmission Line(s) that transmitted the electrical
8 power generated from the Douglas Point Reactor,
9
10 b) What is/are the measured length of that/those Transmission Line(s) in separate
11 and combined length, expressed in KM,? and
12
13 c) When was such construction of that/those Lines completed ?
14

15
16 *Response*

- 17
18 (a) through (c) Please refer to Attachment 1, "Table of Transmission Line Data for Fallis
19 Interrogatories", and to the response to Fallis Interrogatory # 3.

Attachment 1
Table of Transmission Line Data for Fallis Interrogatories

	Line	In Service Date	Length (km)	Firm Capacity *		Capability (MW) **	Avg Loading (2007)	Max Loading (2007)
				Amps	MW*			
1	A.3.1 230 KV TRANSMISSION LINE BRUCE TO HANOVER/ORANGEVILLE:							
	Bruce x Hanover - B4V & B5V	26-Nov-63	48	1019	423	284	452	560 (B4V) & 340 (B5V)
	Hanover x Orangeville - B4V & B5V	10-Dec-61	77	991	412	287	378	293 (B4V) & 267 (B5V)
2	A.3.2 230 KV TRANSMISSION LINE BRUCE TO OWEN SOUND:							
	Bruce x Owen Sound - B27S & B28S	31-Oct-77	69	860	357	273	175	230 (B27S) & 160 (B28S)
	Owen Sound x Stayner - S2S	4-Jul-47	67	551	115	36	83	150 (S2S)
3	A.3.3 230 KV TRANSMISSION LINE BRUCE TO DETWEILER:							
	Bruce x Seaforth - B22D & B23D	11-Oct-75	111	991	412	278	374	355 (B22D) & 355 (B23D)
	Seaforth x Detweiler - B22D & B23D	20-Nov-70	81	860	357	274	135	163 (B22D) & 156 (B23D)
4	A.3.4 500 KV TRANSMISSION LINE BRUCE TO MILTON***:							
	Bruce x Milton - B560M & B561M****	1-Apr-83	176	2636	2442	2040	-	-
	Bruce x Milton/Claireville - B560V & B561M	1-Oct-94	209/ 176	2636	2442	2040	2051	1655 (B560M) & 1525 (B561M)
5	A.3.4 500 KV TRANSMISSION LINE BRUCE TO LONGWOOD:							
	Bruce x Longwood - B562L & B563L	26-Nov-90	189	2636	2442	2038	1103	995 (B562L) & 1020 (B563L)

* The MW are calculated from the Ampere capacity assuming the appropriate voltage of 120 kV, 240 kV or 535 kV at a power factor of 0.9.
 Firm Capacity means the capacity available on that line assuming that one of the two circuits is out of service.

** Capability means the power that can be transmitted along the line without requiring additional voltage support from other sources. This number is also known as the Surge Impedance Loading (SIL). The SIL can be increased by adding shunt or series compensation. A shunt capacitor bank is an example of shunt compensation. Although it is possible to reliability transmit power along the line in excess of the SIL, the voltage performance suffers. For a transmission path of about the length of the circuits in the Bruce area, exceeding SIL by more than 50% is not realistic unless a large amount of compensation is provided.

*** When this line was first placed into service in 1983, both circuits went to Milton SS and the two circuits were known as B560M and B561M. On October 1, 1994, the B560M circuit was reconfigured at Milton SS to bypass Milton SS and terminated instead at Claireville TS. It was renamed to B560V to reflect the change in termination. This change increased the length by 33 km. The capacity and capability of the line did not change as a result.

A portion of the Bruce x Milton line was initially placed into service in 1979 and operated at 230 kV in order to provide some additional transmission capacity. before the construction of the line at the Milton end was completed. The portion that was so connected went from Bruce to Belwood Junction where it was connected to the 230 kV circuits D6V & D7V, Detweiler x Orangeville.

**** In service April 1, 1983, out-of-service Sept 30, 1994.

Fallis INTERROGATORY #7 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

Ref. Bruce Power New Build Project -for Bruce "C" - Application for construction at the Bruce of a 4,000 MW - 4 Nuclear Reactor Power Generation system - as submitted to the Canadian Nuclear Safety Commission in December of 2006, with a request to approve a full 3 year environmental impact study;

Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

System Impact Assessment Report - March 27, 2007 of IESO:

1 This SIA Report does not make any statement or calculation anywhere therein the of
2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1),that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction ofthe new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eights
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission ofcommitted or projected wind-
16 generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 ofthe Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels ofthe existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

25
26 An Assessment of the Adequacy of Generation and Transmission Facilities to Meet
27 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
28 - dated August 2005

29
30 This Report was prepared by IESO in August 1995, contemplating the return to service
31 ofUnits 1 & 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
34 Govt's coal shutdown timeframe, (P. iii).

35
36
37 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
38 shunt capacitor and a conversion ofcertain Nanticoke Units to synchronous condenser
39 should be sufficient to enhance transfer capability of the existing transmission facilities to
40 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
41 transmission line, (P. 27).

42
43 Preliminmy IESO studies indicate that the proposed 500KV series capacitors on the lines
44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.I Douglas Point Nuclear Reactor

5
6 What was the maximum transmission capacity, expressed in MWIh, of each of that/those
7 Transmission Line(s) that transmitted the electrical power generated from the Douglas
8 Point Reactor during its commissioned years of electrical power generation?

9
10
11 *Response*

12
13 Please refer to the table provided in Attachment 1 to Hydro One's response to Fallis
14 Interrogatory 6.

15
16 Please note that for the purpose of determining transmission capability out of the Bruce
17 area, one cannot simply add the MW of capacity arithmetically from the table. The
18 transfer capability depends on other considerations beyond capacity. Please see the
19 response to Fallis Interrogatory # 101 (E)

20

Fallis INTERROGATORY #8 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

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Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

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Preamble:

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3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1),that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

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7 intended to allow additional generating capacity to be incorporated beyond the eights
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission ofcommitted or projected wind-
16 generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 ofthe Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels ofthe existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

25
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31 ofUnits 1 & 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
34 Govt's coal shutdown timeframe, (P. iii).

35
36
37 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
38 shunt capacitor and a conversion ofcertain Nanticoke Units to synchronous condenser
39 should be sufficient to enhance transfer capability of the existing transmission facilities to
40 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
41 transmission line, (P. 27).

42
43 Preliminmy IESO studies indicate that the proposed 500KV series capacitors on the lines
44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.1 Douglas Point Nuclear Reactor

- 5
6 a) Is/are the Transmission Line(s) that transmitted the electrical power generated
7 from the Douglas Point Reactor still in service today, and if so,
8
9 b) Is the maximum electrical transmission capacity of that those Transmission
10 Line(s), expressed in MW, still the same today as it/they was/were during the
11 commissioned operation of and power generation from the Douglas Point Reactor,
12 and
13
14 c) If not - why not?

15
16
17 **Response**

- 18
19 a) to c) Yes, the capacity of individual circuits is the same. However, the transmission
20 capability out of the Bruce area has changed over the years depending upon the
21 evolution of the overall transmission system.

Fallis INTERROGATORY #9 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

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Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

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40 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
41 transmission line, (P. 27).

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44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.I Douglas Point Nuclear Reactor

5
6 a) Since the Douglas Point Reactor was de-commissioned has/have the dedicated
7 Transmission Line(s) used originally to transmit electrical energy produced at the
8 Douglas Point Reactor been used since that date of de-commissioning of the Douglas
9 Point Reactor, been used for the transmission of electrical power otherwise and since
10 1984 generated from the Bruce area facilities, and

11
12 b) If not - why not?
13

14
15 Response

16
17 Yes.

Fallis INTERROGATORY #10 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

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40 transmission line, (P. 27).

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42 Preliminmy IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.I Douglas Point Nuclear Reactor

- 5
6 a) If the dedicated Transmission Line(s) used originally to transmit electrical energy
7 produced at the Douglas Point Reactor have not been used since de-
8 commissioning in 1984 or have not been used to the same maximum intensities of
9 electrical transmission as so utilized while the Douglas Point Reactor was
10 commissioned and so used, why, and
11
12 b) Are there transmission upgrades that could now be made to restore the
13 transmission capacity of that/those Transmission Line(s) to maximum 1968 -
14 1984 transmission capacity levels?
15

16
17 *Response*

- 18
19 a) to b) Changes were not made to transmission lines following the 1984 de-
20 commissioning of the Douglas Point Reactor, and the capability of these
21 transmission circuits accordingly remains unchanged. The B20P and B24P
22 circuits are used today to supply the local load from Douglas Point TS and
23 transmit less power today than they did prior to the Douglas Point Reactor 1984
24 de-commissioning.

Fallis INTERROGATORY #11 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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40 transmission line, (P. 27).

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3

4 A.1 Douglas Point Nuclear Reactor

5

6 What is the present maximum electrical transmission capacity of the Transmission
7 Line(s), expressed in MW/h. used originally to transmit electrical energy produced at the
8 Douglas Point Reactor?

9

10

11 *Response*

12

13 Please refer Hydro One's response to Fallis Interrogatory 7 and 10.

Fallis INTERROGATORY #12 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission of committed or projected wind-
16 generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 of the Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels of the existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

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36 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
37 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
38 should be sufficient to enhance transfer capability of the existing transmission facilities to
39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

41
42 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.I Douglas Point Nuclear Reactor

5
6 What would be the maximum electrical transmission capacity of the Transmission
7 Line(s), expressed in MW/h, used originally to transmit electrical energy produced at the
8 Douglas Point Reactor, with maximum upgrades made thereto?

9
10
11 *Response*

12
13 The Term “maximum upgrades” is undefined. The existing capacity of the original lines
14 is provided in the response to Fallis Interrogatory 11. Please also note that transmission
15 capability depends upon prevailing system conditions. A system model that could
16 represent the system conditions that existed during the time in which the Douglas Point
17 reactor was first in service is not available.

Fallis INTERROGATORY #13 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

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Preamble:

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Ref B/Tab 6/Sch2 - IESO REP – 0382

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4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
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7 intended to allow additional generating capacity to be incorporated beyond the eights
8 units at the Bruce complex and all of the committed wind turbine projects...

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11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
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40 transmission line, (P. 27).

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3

4 A.2 Bruce "A" Nuclear Facility

5

6 What was the original "in-service" commissioning dates for each of Units '1', '2', '3' and '4'
7 of Bruce 'A' at the Bruce?

8

9

10 *Response*

11

	In-Service Date
Unit 1	Sep-01-1977
Unit 2	Sep-01-1977
Unit 3	Feb-01-1978
Unit 4	Jan-18-1979

12

Fallis INTERROGATORY #14 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

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40 transmission line, (P. 27).

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.2 Bruce "A" Nuclear Facility

5
6 What was the design electrical power generation capacity of each of Units '1', '2', '3' and
7 '4' of Bruce 'A', expressed in MW/h ?

8
9
10 *Response*

11
12 For the purposes this question, "design electrical power generation capacity" is assumed
13 to be the gross maximum continuous rating (MCR) of the unit. For planning purposes,
14 each of the Bruce A units has a gross MCR of 805 MW.

15

Fallis INTERROGATORY #15 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

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Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

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16 generated electrical power.

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22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

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37 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
38 should be sufficient to enhance transfer capability of the existing transmission facilities to
39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

41
42 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.2 Bruce "A" Nuclear Facility

5
6 What is the actual maximum 'net generating capacity' of each of Units '1', '2', '3' and '4' of
7 Bruce 'A,' expressed in MW/h. (The Auditor General of Ontario determined in April,
8 2007 in his Report on the Refurbishment Agreement between Bruce Power and the OPA
9 made October 17th, 2005, that each Unit of Bruce 'A' had an authorized net generating
10 capacity of 769 MW/h)?

11
12
13 *Response*

14
15 Each Bruce A unit has a maximum net generating capacity of 750 MW. Please refer to
16 the technical conference presentation slides 14 and 15.
17

Fallis INTERROGATORY #16 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

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8 units at the Bruce complex and all of the committed wind turbine projects...

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.2 Bruce "A" Nuclear Facility

5
6 On what dates were each of Units '1' and '2' of Bruce "A" de-commissioned and taken out
7 of-service and ceased generating electrical power at the Bruce?

8
9
10 *Response*

11
12 Unit 1 was taken of service on October 16, 1997, and Unit 2 was taken out of service on
13 October 8, 1995.

14

Fallis INTERROGATORY #17 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
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- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.2 Bruce "A" Nuclear Facility

5
6 On the dates of the respective original "in-service" commissioning dates for each of Units
7 '1', '2', '3' and '4' at Bruce 'A' what were the contemplated power generation electrical life
8 expectancies for each of Units '1', '2', '3' and '4' of Bruce 'A' expressed as contemplated
9 decommissioning dates ?

10
11
12 *Response*

13
14 As indicated in the letter from counsel to Hydro One dated February 26, 2008, the
15 requested information regarding the expected lives at the commissioning dates of the
16 Bruce A nuclear units is not available.

17

Fallis INTERROGATORY #18 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
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1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.2 Bruce "A" Nuclear Facility

5
6 a) Were the original contemplated dates for de-commissioning of Units '1' and '2' of
7 Bruce 'A' at substantial variance with the actual dates of de-commissioning of
8 Units '1' and '2' of Bruce 'A' and

9
10 b) If so, - why?

11
12
13 *Response*

14
15 As indicated in the letter from counsel to Hydro One dated February 26, 2008, the
16 requested information regarding the commissioning dates of the Bruce A nuclear units is
17 not available.
18

Fallis INTERROGATORY #19 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

Ref. Bruce Power New Build Project -for Bruce "C" - Application for construction at the Bruce of a 4,000 MW - 4 Nuclear Reactor Power Generation system - as submitted to the Canadian Nuclear Safety Commission in December of 2006, with a request to approve a full 3 year environmental impact study;

Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

System Impact Assessment Report - March 27, 2007 of IESO:

1 This SIA Report does not make any statement or calculation anywhere therein the of
2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1), that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction of the new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eight
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission of committed or projected wind-
16 generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 of the Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels of the existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

25
26 An Assessment of the Adequacy of Generation and Transmission Facilities to Meet
27 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
28 - dated August 2005

29
30 This Report was prepared by IESO in August 1995, contemplating the return to service of
31 Units 1 & 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
34 Govt's coal shutdown timeframe, (P. iii).

35
36 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
37 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
38 should be sufficient to enhance transfer capability of the existing transmission facilities to
39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

41
42 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.2 Bruce "A" Nuclear Facility

5
6 On what dates were each of Units '3' and '4' of Bruce "A" originally scheduled for
7 decommission to be taken out-of-service and cease generating electrical power at the
8 Bruce?

9
10
11 *Response*

12
13 As indicated in the letter from counsel to Hydro One dated February 26, 2008, the
14 requested information regarding the commissioning dates of the Bruce A nuclear units is
15 not available.
16

Fallis INTERROGATORY #20 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

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Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

1 **Preamble:**

2
3 System Impact Assessment Report - March 27, 2007 of IESO:

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5 combined transmission capacity, expressed in MW of the three existing 230KV and two
6 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1),that the new 500
7 KV line will have no materially adverse effect on the IESO-controlled grid.

8
9 The SIA Report states (p. 11 - para. 9), that the construction ofthe new 500 KV line is
10 intended to allow additional generating capacity to be incorporated beyond the eights
11 units at the Bruce complex and all of the committed wind turbine projects...

12
13 The SIA Report does not make any schematic or analytical provision therein to receive at
14 the Bruce Complex or elsewhere in grid system the any of the committed or projected
15 wind-generated electrical power for transmission to any of the 230KV or 500KV
16 transmission lines, existing or projected, nor makes any recommendations for the
17 construction at the Bruce Complex or elsewhere of any switchyard facilities to
18 whatsoever to accommodate the receipt and transmission ofcommitted or projected wind-
19 generated electrical power.

20
21 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
22 of the Bruce is required as soon as possible to accommodate, additional generation
23 expected from the new projects and the refurbished Bruce nuclear units. That ORO
24 Report fails to state what are the present transfer capabilities levels ofthe existing 5
25 transmission lines, and what the transfer capability levels must attain, expressed in MW.

26
27 **Preamble:**

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30 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
31 - dated August 2005

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33 This Report was prepared by IESO in August 1995, contemplating the return to service of
34 Units 1& 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
35 assessment of the demand-supply picture for the province and to provide a plan
36 identifying the timing and requirements for system changes needed to meet the Ont.
37 Govt's coal shutdown timeframe, (P. iii).

38
39 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
40 shunt capacitor and a conversion ofcertain Nanticoke Units to synchronous condenser
41 should be sufficient to enhance transfer capability of the existing transmission facilities to
42 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
43 transmission line, (P. 27).

1 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
2 emanating from the Bruce Complex should sufficiently enhance the transfer capability of
3 the existing transmission facilities to allow the additional capacity at Bruce GS to be
4 incorporated without the need for any new transmission lines

5
6 A.2 Bruce "A" Nuclear Facility

- 7
8 a) During what calendar periods of time were each of Units' 1', '2', '3' and '4' of
9 Bruce 'A' each producing, at the same time, a maximum power generation
10 capacity, in a combined format, a maximum power generation capacity, in a
11 combined format, and
12
13 b) What was the maximum combined generation capacity from all of Units '1', '2', '3'
14 and '4' of Bruce 'A', all generating maximum power at capacity together, at the
15 same time, as expressed in MW/h ?
16

17
18 *Response*

- 19
20 a) As noted in Hydro One's earlier correspondence dated February 26, 2008 to the
21 Board and parties, generation production data prior to market opening is not
22 available.
23

24 Not all four units were in service from market opening to the present. For the purpose
25 of responding to this question, the IESO has assumed the combined "maximum
26 power generation capacity" for the two units that were in service (i.e., Units 3 and 4)
27 during this period to be equal to or above 1,500 MW.
28

29 Since market opening, Units 3 and 4 were simultaneously injecting (i.e., 1,500 MW
30 or greater) into the IESO-controlled grid on a continuous basis during the following
31 months:
32

Year	Month
2004	Mar
2004	Jul
2004	Aug
2004	Sep
2004	Dec
2005	May
2005	Jun
2005	Jul
2005	Aug
2005	Sep
2005	Oct

Filed: March 12, 2008

EB-2007-0050

Exhibit C

Tab 3

Schedule 20

Page 4 of 4

Year	Month
2005	Nov
2005	Dec
2006	Jan
2006	Feb
2006	Mar
2006	Apr
2006	Jul
2006	Aug
2006	Sep
2006	Nov
2006	Dec
2007	Apr
2007	May
2007	Jun
2007	Jul
2007	Aug
2007	Sep
2007	Dec
2008	Jan

1

2 b) The maximum combined generation capacity of Units 3 and 4, expressed in MWh, is
3 1558 MWh.

4

Fallis INTERROGATORY #21 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

Ref. Bruce Power New Build Project -for Bruce "C" - Application for construction at the Bruce of a 4,000 MW - 4 Nuclear Reactor Power Generation system - as submitted to the Canadian Nuclear Safety Commission in December of 2006, with a request to approve a full 3 year environmental impact study;

Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

1 System Impact Assessment Report - March 27, 2007 of IESO:

2 This SIA Report does not make any statement or calculation anywhere therein the of
3 combined transmission capacity, expressed in MW of the three existing 230KV and two
4 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1), that the new 500
5 KV line will have no materially adverse effect on the IESO-controlled grid.

6
7 The SIA Report states (p. 11 - para. 9), that the construction of the new 500 KV line is
8 intended to allow additional generating capacity to be incorporated beyond the eight
9 units at the Bruce complex and all of the committed wind turbine projects...

10
11 The SIA Report does not make any schematic or analytical provision therein to receive at
12 the Bruce Complex or elsewhere in grid system the any of the committed or projected
13 wind-generated electrical power for transmission to any of the 230KV or 500KV
14 transmission lines, existing or projected, nor makes any recommendations for the
15 construction at the Bruce Complex or elsewhere of any switchyard facilities to
16 whatsoever to accommodate the receipt and transmission of committed or projected wind-
17 generated electrical power.

18
19 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
20 of the Bruce is required as soon as possible to accommodate, additional generation
21 expected from the new projects and the refurbished Bruce nuclear units. That ORO
22 Report fails to state what are the present transfer capabilities levels of the existing 5
23 transmission lines, and what the transfer capability levels must attain, expressed in MW.

24
25 **Preamble:**

26
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28 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
29 - dated August 2005

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31 This Report was prepared by IESO in August 1995, contemplating the return to service of
32 Units 1 & 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
33 assessment of the demand-supply picture for the province and to provide a plan
34 identifying the timing and requirements for system changes needed to meet the Ont.
35 Govt's coal shutdown timeframe, (P. iii).

36
37 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
38 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
39 should be sufficient to enhance transfer capability of the existing transmission facilities to
40 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
41 transmission line, (P. 27).

42
43 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.2 Bruce "A" Nuclear Facility

5
6 a) During what calendar periods of time were:

- 7 1. Each of Units '1', '2', '3' and '4' of Bruce 'A' each producing, at the same time,
8 a maximum power generation capacity, in a combined format, while at the
9 same time
- 10 2. Each of Units '1', '2', '3' and '4' of Bruce 'B' were also each producing a
11 maximum power generation capacity, in a combined format, from each of the
12 4 Units at Bruce 'B', and

13
14 b) What was the maximum double combined generation capacity from all of Units
15 '1', '2', '3' and '4' of Bruce 'A', and from Units '1', '2', '3' and '4' of Bruce 'A', both
16 and all generating maximum power at capacity together, at the same time, as
17 expressed in MW/h?

18
19
20 Response

21
22 a) Please see response to Pollution Probe interrogatory No. 1.

23
24 b) Please see response to Pollution Probe interrogatory No. 1.

25

Fallis INTERROGATORY #22 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

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Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

1 **Preamble:**

2 System Impact Assessment Report - March 27, 2007 of IESO:

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5 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1), that the new 500
6 KV line will have no materially adverse effect on the IESO-controlled grid.

7
8 The SIA Report states (p. 11 - para. 9), that the construction of the new 500 KV line is
9 intended to allow additional generating capacity to be incorporated beyond the eight
10 units at the Bruce complex and all of the committed wind turbine projects...

11
12 The SIA Report does not make any schematic or analytical provision therein to receive at
13 the Bruce Complex or elsewhere in grid system the any of the committed or projected
14 wind-generated electrical power for transmission to any of the 230KV or 500KV
15 transmission lines, existing or projected, nor makes any recommendations for the
16 construction at the Bruce Complex or elsewhere of any switchyard facilities to
17 whatsoever to accommodate the receipt and transmission of committed or projected wind-
18 generated electrical power.

19
20 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
21 of the Bruce is required as soon as possible to accommodate, additional generation
22 expected from the new projects and the refurbished Bruce nuclear units. That ORO
23 Report fails to state what are the present transfer capabilities levels of the existing 5
24 transmission lines, and what the transfer capability levels must attain, expressed in MW.

25
26 **Preamble:**

27
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29 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
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31
32 This Report was prepared by IESO in August 1995, contemplating the return to service of
33 Units 1 & 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
34 assessment of the demand-supply picture for the province and to provide a plan
35 identifying the timing and requirements for system changes needed to meet the Ont.
36 Govt's coal shutdown timeframe, (P. iii).

37
38 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
39 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
40 should be sufficient to enhance transfer capability of the existing transmission facilities to
41 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
42 transmission line, (P. 27).

1 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
2 emanating from the Bruce Complex should sufficiently enhance the transfer capability of
3 the existing transmission facilities to allow the additional capacity at Bruce GS to be
4 incorporated without the need for any new transmission lines

5
6 A.2 Bruce "A" Nuclear Facility

7
8 a) During what calendar periods of time were:

- 9 1. each of Units '1', '2', '3' and '4' of Bruce 'A' each producing, at the same time,
10 a maximum power generation capacity, in a combined format, while at the
11 same time,
12 2. each of Units '1', '2', '3' and '4' of Bruce 'B' were also each producing a
13 maximum power generation capacity, in a combined format, from each of the
14 4 Units at Bruce 'B', and
15 3. the Douglas Point Reactor was also, at the same time, producing a maximum
16 power generation capacity there from, and

17
18 b) what was the maximum triple combined generation capacity from all of Units '1',
19 '2', '3' and '4' of Bruce 'A', and from Units '1', '2', '3' and '4' of Bruce 'B', and the
20 Douglas Point Reactor, all generating together, at the same time, as expressed in
21 MW/h, and all three generating maximum power at capacity together, at the same
22 time, as expressed in MW/h ?

23
24
25 Response

- 26
27 a) 1) & 2) See the response to Fallis Interrogatory 21.
28 3) Not applicable. See the response to Fallis Interrogatory 23a, part (a).
29
30 b) See response to a) 3).
31

Fallis INTERROGATORY #23 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

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7 intended to allow additional generating capacity to be incorporated beyond the eights
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11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
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16 generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 of the Bruce is required as soon as possible to accommodate, additional generation
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21 Report fails to state what are the present transfer capabilities levels ofthe existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

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32 assessment of the demand-supply picture for the province and to provide a plan
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37 shunt capacitor and a conversion ofcertain Nanticoke Units to synchronous condenser
38 should be sufficient to enhance transfer capability of the existing transmission facilities to
39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

41
42 Preliminmy IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.2 Bruce "A" Nuclear Facility

5
6 Specifically what was the maximum generation capacity, expressed in MW/h of the total
7 electrical power if generated at the same time from the combination of Units '1', '2', '3'
8 and '4' of Bruce 'A' and from Units '1', '2', '3' and '4' of Bruce 'B' and the Douglas Point
9 Reactor?

10
11
12 *Response*

13
14 All four Bruce A units, all four Bruce B units and the Douglas Point Reactor were never
15 in operation at the same time. Therefore, the maximum capacity of the combined units is
16 not applicable.
17

Fallis INTERROGATORY #23(a) List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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37 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
38 should be sufficient to enhance transfer capability of the existing transmission facilities to
39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

41
42 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.2 Bruce "A" Nuclear Facility

- 5
6 a) Has the transmission capacity along all Transmission Lines originating at the
7 Bruce, as constructed for transmitting all maximum generation capacity of all
8 electrical power generated from the combination from each of Units '1', '2', '3' and
9 '4' of Bruce 'A', and from Units '1', '2', '3' and '4' of Bruce 'B', and the Douglas
10 Point Reactor for transmission to the Ontario Hydro Grid, ever been so deficient
11 so as not to be able to transmit any such maximum generation of power so
12 produced from Bruce 'A', Bruce 'B' and Douglas Point Reactor combined, and
13
14 b) If so during what calendar periods of time has such transmission capacity been so
15 deficient and
16
17 c) If so, what line outages or transmission deficiencies caused such lack of
18 transmission capacity ?
19
20

21 **Response**

- 22
23 (a) All four Bruce A units, all four Bruce B units and the Douglas Point Reactor were
24 never in operation at the same time. Therefore, they were never producing their
25 maximum generation at the same time.
26
27 (b) See part A.
28
29 (c) See part A.
30

Fallis INTERROGATORY #23(b) List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

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Preamble:

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Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

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4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction of the new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eight
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission of committed or projected wind-
16 generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 of the Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels of the existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

25
26 An Assessment of the Adequacy of Generation and Transmission Facilities to Meet
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30 This Report was prepared by IESO in August 1995, contemplating the return to service of
31 Units 1 & 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
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37 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
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40 transmission line, (P. 27).

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.2 Bruce "A" Nuclear Facility

5
6 Of the total power produced from all present power producing nuclear units within Bruce
7 "A" GS what amount in MW and also expressed as a percentage of gross power
8 production is represented by power so produced and consumed by Bruce Power on site.

9
10
11 *Response*

12
13 The gross MCR of the Bruce A units is 805 MW (see the response to Fallis Interrogatory
14 14). Each unit has a station service load of 55 MW. This is approximately 7% of the
15 gross MCR of each Bruce A unit.

16

Fallis INTERROGATORY #24 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3

4 A.2 Bruce "B" Nuclear Facility

5

6 What was the original "in-service" commissioning dates for each of Units '1', '2', '3' and '4'
7 of Bruce 'B' at the Bruce?

8

9

10 *Response*

11

	In-Service Date
Unit 5	Mar-1-1985
Unit 6	Sept-14-1984
Unit 7	Apr-10-1986
Unit 8	May-22-1987

12

Fallis INTERROGATORY #25 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.2 Bruce "B" Nuclear Facility

5
6 What was the design electrical power generation capacity of each of Units '1', '2', '3' and
7 '4' of Bruce 'B' expressed in MW/h?

8
9
10 *Response*

11
12 For the purposes this question, "design electrical power generation capacity" is assumed
13 to be the gross maximum continuous rating (MCR) of the unit. For planning purposes,
14 each of the Bruce B units has a gross MCR of 900 MW.

15

Fallis INTERROGATORY #26 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.2 Bruce "B" Nuclear Facility

- 5
6 a) What is the actual maximum 'net generating capacity' of each of each of Units '1',
7 '2', '3' and '4' of Bruce 'B' expressed in MW/h. (. (The Auditor General of Ontario
8 determined in April, 2007 in his Report on the Refurbishment Agreement between
9 Bruce Power and the OPA made October 17th 2005, that each Unit of Bruce 'A'
10 had an authorized net generating capacity of 785 MW/h) ? In the IPSP Discussion
11 Paper # 5 - Transmission produced by the OPA , filed as Exhibit b, Tab 6,
12 Schedule 5, Appendix 5, & on page 44 thereof the OPA states that each of Units
13 1,2,3 & 4 of Bruce 'B' have a generation capacity of 890 MW/h.
14
15 b) Which statement as to the production capacity of each of Units 1, 2, 3 & 4 of
16 Bruce 'B' is wrong? and
17
18 c) has he OPA taken steps to correct the wrong information disseminated by the
19 Auditor General of Ontario, or has the OPA stated the wrong production capacity
20 of each of Units 1, 2, 3 & 4 of Bruce 'B' and so advised the OEB and participants
21 and interveners in this proceeding.
22
23

24 **Response**

- 25
26 a) According to the technical conference presentation slide 14 and 15, the current net
27 generating capacities of the Bruce B units are a combined 3,234 MW (for an average
28 capacity of 808 MW per unit). Each Bruce B unit is intended to be upgraded such
29 that each has a net generating capacity of 850 MW.
30
31 b) The most up to date numbers were presented at the technical conference.
32
33 c) The OPA believes that the information provided in part (a) is the most current.
34

Fallis INTERROGATORY #27 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
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1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.2 Bruce "B" Nuclear Facility

5
6 On the dates of the respective original "in-service" commissioning dates for each of Units
7 '1', '2', '3' and '4' of Bruce 'B' what were the contemplated power generation electrical life
8 expectancies for each of Units '1', '2', '3' and '4' of Bruce 'B'.?

9
10
11 *Response*

12
13 As indicated in the letter from counsel to Hydro One dated February 26, 2008, the
14 requested information regarding the expected lives at the commissioning dates of the
15 Bruce B nuclear units is not available.

16

Fallis INTERROGATORY #28 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
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44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.2 Bruce “B” Nuclear Facility

- 5
6 a) During what calendar periods of time have each of Units '1', '2', '3' and '4' of
7 Bruce 'A' each been producing, at the same time, a maximum power generation
8 capacity, in a combined format, and
9
10 b) what is the maximum combined generation capacity from all of Units '1', '2', '3'
11 and '4' of Bruce 'B' all generating maximum power at capacity, together, at the
12 same time, as expressed in MW/h ?
13
14

15 **Response**

- 16
17 a) As noted in Hydro One’s earlier correspondence dated February 26, 2008 to the
18 Board and parties, generation production data prior to market opening is not
19 available.
20

21 For the purpose of responding to this question, the IESO has assumed “maximum
22 power generation capacity” for all four units combined to be equal to or above 3,000
23 MW. Since market opening, the four units were simultaneously injecting (i.e., above
24 3000 MW) into the IESO-controlled grid on a continuous basis during the following
25 months:
26

Year	Month
2002	Aug
2002	Sep
2002	Dec
2003	Jan
2003	Feb
2003	Mar
2003	Apr
2003	Jun
2003	Jul
2003	Aug
2003	Sep
2004	Jan
2004	Feb
2004	Mar
2004	Apr
2004	May
2004	Jun

Filed: March 12, 2008

EB-2007-0050

Exhibit C

Tab 3

Schedule 28

Page 4 of 4

Year	Month
2004	Jul
2004	Aug
2004	Sep
2004	Dec
2005	Jan
2005	Feb
2005	Mar
2005	Apr
2005	May
2005	Aug
2005	Sep
2005	Oct
2006	Jan
2006	Feb
2006	Mar
2006	Apr
2006	May
2006	Jun
2006	Jul
2006	Aug
2006	Sep
2006	Nov
2006	Dec
2007	Jan
2007	Apr
2007	May
2007	Jun
2007	Jul
2007	Aug
2007	Sep
2007	Oct
2007	Nov
2007	Dec
2008	Jan

1
2
3
4

b) The maximum combined generation capacity of all four units, expressed in MWh, is 3324 MWh.

Fallis INTERROGATORY #28(a) List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

Ref. Bruce Power New Build Project -for Bruce "C" - Application for construction at the Bruce of a 4,000 MW - 4 Nuclear Reactor Power Generation system - as submitted to the Canadian Nuclear Safety Commission in December of 2006, with a request to approve a full 3 year environmental impact study;

Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

1 **Preamble:**

2
3 System Impact Assessment Report - March 27, 2007 of IESO:

4 This SIA Report does not make any statement or calculation anywhere therein the of
5 combined transmission capacity, expressed in MW of the three existing 230KV and two
6 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1),that the new 500
7 KV line will have no materially adverse effect on the IESO-controlled grid.

8
9 The SIA Report states (p. 11 - para. 9), that the construction ofthe new 500 KV line is
10 intended to allow additional generating capacity to be incorporated beyond the eights
11 units at the Bruce complex and all of the committed wind turbine projects...

12
13 The SIA Report does not make any schematic or analytical provision therein to receive at
14 the Bruce Complex or elsewhere in grid system the any of the committed or projected
15 wind-generated electrical power for transmission to any of the 230KV or 500KV
16 transmission lines, existing or projected, nor makes any recommendations for the
17 construction at the Bruce Complex or elsewhere of any switchyard facilities to
18 whatsoever to accommodate the receipt and transmission ofcommitted or projected wind-
19 generated electrical power.

20
21 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
22 of the Bruce is required as soon as possible to accommodate, additional generation
23 expected from the new projects and the refurbished Bruce nuclear units. That ORO
24 Report fails to state what are the present transfer capabilities levels ofthe existing 5
25 transmission lines, and what the transfer capability levels must attain, expressed in MW.

26
27 **Preamble:**

28
29 An Assessment of the Adequacy of Generation and Transmission Facilities to Meet
30 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
31 - dated August 2005

32
33 This Report was prepared by IESO in August 1995, contemplating the return to service of
34 Units 1& 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
35 assessment of the demand-supply picture for the province and to provide a plan
36 identifying the timing and requirements for system changes needed to meet the Ont.
37 Govt's coal shutdown timeframe, (P. iii).

38
39 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
40 shunt capacitor and a conversion ofcertain Nanticoke Units to synchronous condenser
41 should be sufficient to enhance transfer capability of the existing transmission facilities to
42 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
43 transmission line, (P. 27).

1 Preliminmy IESO studies indicate that the proposed 500KV series capacitors on the lines
2 emanating from the Bruce Complex should sufficiently enhance the transfer capability of
3 the existing transmission facilities to allow the additional capacity at Bruce GS to be
4 incorporated without the need for any new transmission lines

5
6 A.2 Bruce "B" Nuclear Facility

7
8 Of the total power produced from all present power producing nuclear units within Bruce
9 "B" GS what amount in MW and also expressed as a percentage of gross power
10 production is represented by power so produced and consumed by Bruce Power on site.

11
12
13 *Response*

14
15 The gross MCR of the Bruce B units is 900 MW (see Hydro One's response to Fallis
16 Interrogatory 25). Each unit has a station service load of 50 MW. Based on a net MCR
17 of 850 MW, this is approximately 6% of the gross MCR of each Bruce A unit.

18

Fallis INTERROGATORY #29 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

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Preamble:

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Ref B/Tab 6/Sch2 - IESO REP – 0382

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Preamble:

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7 intended to allow additional generating capacity to be incorporated beyond the eight
8 units at the Bruce complex and all of the committed wind turbine projects...

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15 whatsoever to accommodate the receipt and transmission of committed or projected wind-
16 generated electrical power.

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21 Report fails to state what are the present transfer capabilities levels of the existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

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24 **Preamble:**

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30 This Report was prepared by IESO in August 1995, contemplating the return to service of
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32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
34 Govt's coal shutdown timeframe, (P. iii).

35
36 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
37 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
38 should be sufficient to enhance transfer capability of the existing transmission facilities to
39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

41
42 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.1 230 KV Transmission line Bruce to Hanover/Orangeville:

- 5
6 a) Was this 230 KV Transmission Line to Orangeville constructed under the
7 authority of the Hydro Electric Power Commission of Ontario, and
8
9 b) what was/is the length of such Line, expressed in KM, and
10
11 c) (C) what was the 'in-service date for the transmission of power along such 230
12 KV Line?
13
14

15 **Response**

16
17 (a) Yes.

18
19 (b) and (c) Please refer to the table provided in Attachment 1 to Hydro One's response to
20 Fallis Interrogatory 6

Fallis INTERROGATORY #30 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

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Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

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33 identifying the timing and requirements for system changes needed to meet the Ont.
34 Govt's coal shutdown timeframe, (P. iii).

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36 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
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40 transmission line, (P. 27).

41
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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.1 230 KV Transmission line Bruce to Hanover/Orangeville:

5
6 Was this 230 KV Transmission Line to Orangeville built originally to transmit power
7 generated from the Douglas Pont Reactor?

8
9
10 *Response*

11
12 Hydro One is not aware of the specific reasons for construction of the original 230 kV
13 circuit. However, this line was placed into service in 1963, five years prior to the
14 commissioning of the Douglas Point Reactor.

Fallis INTERROGATORY #31 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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40 transmission line, (P. 27).

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.1 230 KV Transmission line Bruce to Hanover/Orangeville:

5
6 What was the maximum design transmission capacity of this 230 KV Line to
7 Orangeville, expressed in MW/h, when it was originally put into service?

8
9
10 *Response*

11
12 Please refer to the table provided in Attachment 1 to Hydro One's response to Fallis
13 Interrogatory 6.

Fallis INTERROGATORY #32 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.1 230 KV Transmission line Bruce to Hanover/Orangeville:

5
6 What has been the maximum sustained electrical power transmission along this existing
7 230 KV Line to Orangeville, expressed in MW/h ?

8
9
10 *Response*

11
12 Hydro One assumes that “maximum sustained electrical power transmission” means peak
13 power transferred over the circuit during one hour. Analysis of power flow records
14 dating back to 1963, when the line went in-service, would be required to fully address
15 this question. This information is not available. For the design capacity of the circuit, and
16 for power flow information for the year 2007, please refer to the table provided in
17 Attachment 1 to Hydro One’s response to Fallis Interrogatory 6.

Fallis INTERROGATORY #33 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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2 incorporated without the need for any new transmission lines

3
4 A.3.1 230 KV Transmission line Bruce to Hanover/Orangeville:
5

6 A former Minister of Energy of Ontario advised the Ontario Legislature that this existing
7 230 KV line was capable of transmitting all of the power generated from Units '1' and '2' of
8 what is now and was then Bruce 'A'. The Auditor General of Ontario has advised that the
9 net generation capacity for each of the 4 Units at Bruce 'A' was 769 MW/h. This represents
10 1,538 MW/h of power generation. Did the 230 KV Line have, from the outset the design
11 transmission capacity to transmit thereon 1,538 MW/h as generated from the Bruce.
12

13 a) Was that statement technically correct when then made, and is that statement still
14 technically correct today, and

15
16 b) if not - why not?
17
18

19 **Response**
20

21 Hydro One is not aware of the specific statement referred to. The 230 kV line is not
22 capable of transmitting the level of power noted in the question. Please refer to the table
23 provided in Attachment 1 to Hydro One's response to Fallis Interrogatory 6 for the
24 transfer capability of the 230 kV circuit.

Fallis INTERROGATORY #34 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

Ref. Bruce Power New Build Project -for Bruce "C" - Application for construction at the Bruce of a 4,000 MW - 4 Nuclear Reactor Power Generation system - as submitted to the Canadian Nuclear Safety Commission in December of 2006, with a request to approve a full 3 year environmental impact study;

Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

1 System Impact Assessment Report - March 27, 2007 of IESO:

2 This SIA Report does not make any statement or calculation anywhere therein the of
3 combined transmission capacity, expressed in MW of the three existing 230KV and two
4 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1), that the new 500
5 KV line will have no materially adverse effect on the IESO-controlled grid.

6
7 The SIA Report states (p. 11 - para. 9), that the construction of the new 500 KV line is
8 intended to allow additional generating capacity to be incorporated beyond the eight
9 units at the Bruce complex and all of the committed wind turbine projects...

10
11 The SIA Report does not make any schematic or analytical provision therein to receive at
12 the Bruce Complex or elsewhere in grid system the any of the committed or projected
13 wind-generated electrical power for transmission to any of the 230KV or 500KV
14 transmission lines, existing or projected, nor makes any recommendations for the
15 construction at the Bruce Complex or elsewhere of any switchyard facilities to
16 whatsoever to accommodate the receipt and transmission of committed or projected wind-
17 generated electrical power.

18
19 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
20 of the Bruce is required as soon as possible to accommodate, additional generation
21 expected from the new projects and the refurbished Bruce nuclear units. That ORO
22 Report fails to state what are the present transfer capabilities levels of the existing 5
23 transmission lines, and what the transfer capability levels must attain, expressed in MW.

24
25 **Preamble:**

26
27 An Assessment of the Adequacy of Generation and Transmission Facilities to Meet
28 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
29 - dated August 2005

30
31 This Report was prepared by IESO in August 1995, contemplating the return to service of
32 Units 1 & 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
33 assessment of the demand-supply picture for the province and to provide a plan
34 identifying the timing and requirements for system changes needed to meet the Ont.
35 Govt's coal shutdown timeframe, (P. iii).

36
37 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
38 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
39 should be sufficient to enhance transfer capability of the existing transmission facilities to
40 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
41 transmission line, (P. 27).

42
43 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.1 230 KV Transmission line Bruce to Hanover/Orangeville:

5
6 Did the 230 KV line to Orangeville have the design capacity to transmit 1,538 Mm/h as
7 might be produced from the Units' 1' and '2' together with all additional generation
8 capacity from the Douglas Point Reactor, expressed as MW/h ?

9
10
11 *Response*

12
13 Please refer to Hydro One's response to Fallis Interrogatory 33.

Fallis INTERROGATORY #35 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

Ref. Bruce Power New Build Project -for Bruce "C" - Application for construction at the Bruce of a 4,000 MW - 4 Nuclear Reactor Power Generation system - as submitted to the Canadian Nuclear Safety Commission in December of 2006, with a request to approve a full 3 year environmental impact study;

Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

System Impact Assessment Report - March 27, 2007 of IESO:

1 This SIA Report does not make any statement or calculation anywhere therein the of
2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1), that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction of the new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eight
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission of committed or projected wind-
16 generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 of the Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels of the existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

25
26 An Assessment of the Adequacy of Generation and Transmission Facilities to Meet
27 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
28 - dated August 2005

29
30 This Report was prepared by IESO in August 1995, contemplating the return to service of
31 Units 1 & 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
34 Govt's coal shutdown timeframe, (P. iii).

35
36 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
37 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
38 should be sufficient to enhance transfer capability of the existing transmission facilities to
39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

41
42 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.1 230 KV Transmission line Bruce to Hanover/Orangeville:

- 5
6 a) What is the present maximum transmission capacity of this 230 KV Transmission
7 line to Orangeville, expressed in MW/h, and
8
9 b) if it is lower than the original design transmission capacity, why, and,
10
11 c) ifso, are there any technical reasons why this 230 KV Line cannot be refurbished
12 to return it to its original design transmission capacity, and
13
14 d) if so, what are those technical reasons?
15

16
17 **Response**

18
19 a) to d) Please refer to the table provided in Attachment 1 to Fallis Interrogatory 6 for the
20 maximum firm capacity. This amount has not changed from the original design.

Fallis INTERROGATORY #36 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

Ref. Bruce Power New Build Project -for Bruce "C" - Application for construction at the Bruce of a 4,000 MW - 4 Nuclear Reactor Power Generation system - as submitted to the Canadian Nuclear Safety Commission in December of 2006, with a request to approve a full 3 year environmental impact study;

Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

1 System Impact Assessment Report - March 27, 2007 of IESO:

2 This SIA Report does not make any statement or calculation anywhere therein the of
3 combined transmission capacity, expressed in MW of the three existing 230KV and two
4 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1), that the new 500
5 KV line will have no materially adverse effect on the IESO-controlled grid.

6
7 The SIA Report states (p. 11 - para. 9), that the construction of the new 500 KV line is
8 intended to allow additional generating capacity to be incorporated beyond the eight
9 units at the Bruce complex and all of the committed wind turbine projects...

10
11 The SIA Report does not make any schematic or analytical provision therein to receive at
12 the Bruce Complex or elsewhere in grid system the any of the committed or projected
13 wind-generated electrical power for transmission to any of the 230KV or 500KV
14 transmission lines, existing or projected, nor makes any recommendations for the
15 construction at the Bruce Complex or elsewhere of any switchyard facilities to
16 whatsoever to accommodate the receipt and transmission of committed or projected wind-
17 generated electrical power.

18
19 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
20 of the Bruce is required as soon as possible to accommodate, additional generation
21 expected from the new projects and the refurbished Bruce nuclear units. That ORO
22 Report fails to state what are the present transfer capabilities levels of the existing 5
23 transmission lines, and what the transfer capability levels must attain, expressed in MW.

24
25 **Preamble:**

26
27 An Assessment of the Adequacy of Generation and Transmission Facilities to Meet
28 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
29 - dated August 2005

30
31 This Report was prepared by IESO in August 1995, contemplating the return to service of
32 Units 1 & 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
33 assessment of the demand-supply picture for the province and to provide a plan
34 identifying the timing and requirements for system changes needed to meet the Ont.
35 Govt's coal shutdown timeframe, (P. iii).

36
37 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
38 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
39 should be sufficient to enhance transfer capability of the existing transmission facilities to
40 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
41 transmission line, (P. 27).

42
43 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.1 230 KV Transmission line Bruce to Hanover/Orangeville:

5
6 a) Is this 230 KV Transmission Line to Hanover TS /Orangeville TS dedicated to
7 transmit from any particular Unit at the present time, from either Bruce 'A' or
8 Bruce 'B', and

9
10 b) if so, from which dedicated Units at Bruce 'A' and/or Bruce "B"?

11
12
13 Response

14
15 No.

Fallis INTERROGATORY #37 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

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Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

System Impact Assessment Report - March 27, 2007 of IESO:

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2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1), that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction of the new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eight
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission of committed or projected wind-
16 generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 of the Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels of the existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

25
26 An Assessment of the Adequacy of Generation and Transmission Facilities to Meet
27 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
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29
30 This Report was prepared by IESO in August 1995, contemplating the return to service of
31 Units 1 & 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
34 Govt's coal shutdown timeframe, (P. iii).

35
36 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
37 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
38 should be sufficient to enhance transfer capability of the existing transmission facilities to
39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

41
42 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.1 230 KV Transmission line Bruce to Hanover/Orangeville:

5
6 a) What maximum amount of electrical power is typically delivered to the Hanover
7 Transformer Substation ("TS") from the existing 230 KV Transmission Line,
8 expressed in MW/h, and

9
10 b) what amount of electrical power is typically delivered beyond Hanover, from
11 Hanover to Orangeville TS, expressed in MW/h ?

12
13
14 *Response*

15
16 a) and b) Please refer to the table provided in Attachment 1 to Hydro One's response to
17 Fallis Interrogatory 6.

Fallis INTERROGATORY #38 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

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Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

System Impact Assessment Report - March 27, 2007 of IESO:

1 This SIA Report does not make any statement or calculation anywhere therein the of
2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1),that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction ofthe new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eights
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission ofcommitted or projected wind-
16 generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 of the Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels ofthe existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

25
26 An Assessment of the Adequacy of Generation and Transmission Facilities to Meet
27 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
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29
30 This Report was prepared by IESO in August 1995, contemplating the return to service of
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32 assessment of the demand-supply picture for the province and to provide a plan
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34 Govt's coal shutdown timeframe, (P. iii).

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36 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
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38 should be sufficient to enhance transfer capability of the existing transmission facilities to
39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

41
42 Preliminmy IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.1 230 KV Transmission line Bruce to Hanover/Orangeville:

5
6 a) Are any of the 230 KV Transmission Line towers which were constructed over 40
7 years ago in present need of replacement or refurbishment, and

8
9 b) if so , which towers are in such need, all of the towers being presently numbered
10 by HONI ?

11
12
13 Response

14
15 No.

Fallis INTERROGATORY #39 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

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Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

1 System Impact Assessment Report - March 27, 2007 of IESO:

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7 The SIA Report states (p. 11 - para. 9), that the construction of the new 500 KV line is
8 intended to allow additional generating capacity to be incorporated beyond the eight
9 units at the Bruce complex and all of the committed wind turbine projects...

10
11 The SIA Report does not make any schematic or analytical provision therein to receive at
12 the Bruce Complex or elsewhere in grid system the any of the committed or projected
13 wind-generated electrical power for transmission to any of the 230KV or 500KV
14 transmission lines, existing or projected, nor makes any recommendations for the
15 construction at the Bruce Complex or elsewhere of any switchyard facilities to
16 whatsoever to accommodate the receipt and transmission of committed or projected wind-
17 generated electrical power.

18
19 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
20 of the Bruce is required as soon as possible to accommodate, additional generation
21 expected from the new projects and the refurbished Bruce nuclear units. That ORO
22 Report fails to state what are the present transfer capabilities levels of the existing 5
23 transmission lines, and what the transfer capability levels must attain, expressed in MW.

24
25 **Preamble:**

26
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33 assessment of the demand-supply picture for the province and to provide a plan
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38 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
39 should be sufficient to enhance transfer capability of the existing transmission facilities to
40 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
41 transmission line, (P. 27).

42
43 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.1 230 KV Transmission line Bruce to Hanover/Orangeville:

- 5
6 a) Was a working life cycle ever originally established for the 230KV Transmission
7 towers constructed for this 230 KV Line this Line to Orangeville, and
8
9 b) if so what then was the forward calendar date for the end of such working life
10 expectancy for the 230 KV Towers themselves?
11
12

13 *Response*

14
15 Transmission Lines owned by Hydro One constructed using steel lattice towers similar to
16 this particular line have an estimated service life of between 60 to over 100 years
17 depending on the environmental conditions. Over the life of the line, certain components
18 such as insulators or conductor may require replacement which can extend the service
19 life. In general, a line such as this one has a service life expectancy of at least 100 years
20 assuming it is properly maintained.

Fallis INTERROGATORY #40 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

Ref. Bruce Power New Build Project -for Bruce "C" - Application for construction at the Bruce of a 4,000 MW - 4 Nuclear Reactor Power Generation system - as submitted to the Canadian Nuclear Safety Commission in December of 2006, with a request to approve a full 3 year environmental impact study;

Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

System Impact Assessment Report - March 27, 2007 of IESO:

1 This SIA Report does not make any statement or calculation anywhere therein the of
2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1),that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction ofthe new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eights
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission ofcommitted or projected wind-
16 generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 of the Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels ofthe existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

25
26 An Assessment of the Adequacy of Generation and Transmission Facilities to Meet
27 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
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29
30 This Report was prepared by IESO in August 1995, contemplating the return to service of
31 Units 1& 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
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36 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
37 shunt capacitor and a conversion ofcertain Nanticoke Units to synchronous condenser
38 should be sufficient to enhance transfer capability of the existing transmission facilities to
39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

41
42 Preliminmy IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.1 230 KV Transmission line Bruce to Hanover/Orangeville:

- 5
6 a) What is the present working life cycle expectancy for the existing 230 KV Towers
7 within this existing 230 KV Corridor to Orangeville? , and
8
9 b) what is the forward calendar date now utilized as the date after which the existing
10 230 KV Line Towers will no longer be licensed for use by HONI ?
11

12
13 *Response*

14
15 Please refer to Hydro One's response to Fallis Interrogatory 39.
16

Fallis INTERROGATORY #41 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

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Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

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2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1), that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction of the new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eight
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission of committed or projected wind-
16 generated electrical power.

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18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 of the Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels of the existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

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31 Units 1 & 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
32 assessment of the demand-supply picture for the province and to provide a plan
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34 Govt's coal shutdown timeframe, (P. iii).

35
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37 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
38 should be sufficient to enhance transfer capability of the existing transmission facilities to
39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

41
42 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.1 230 KV Transmission line Bruce to Hanover/Orangeville:

- 5
6 a) What is the present working life cycle expectancy for each of the existing 230 KV
7 power cable/conduit lines as strung between each of the 230 KV Towers within
8 this existing 230 KV Corridor?, and
9
10 b) what is the forward calendar date now utilized as the date after which each of the
11 existing 230 KV power cable/conduit lines as strung between each of the 230 KV
12 Towers as located suspended from such 230 KV Towers, within this existing 230
13 KV Corridor..
14

15
16 **Response**

17
18 Please refer to Hydro One's response to Fallis Interrogatory 39.
19

Fallis INTERROGATORY #42 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

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Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

System Impact Assessment Report - March 27, 2007 of IESO:

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2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1),that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

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6 The SIA Report states (p. 11 - para. 9), that the construction ofthe new 500 KV line is
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8 units at the Bruce complex and all of the committed wind turbine projects...

9
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11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
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13 transmission lines, existing or projected, nor makes any recommendations for the
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15 whatsoever to accommodate the receipt and transmission ofcommitted or projected wind-
16 generated electrical power.

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19 of the Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels ofthe existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

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30 This Report was prepared by IESO in August 1995, contemplating the return to service of
31 Units 1& 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
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37 shunt capacitor and a conversion ofcertain Nanticoke Units to synchronous condenser
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39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

41
42 Preliminmy IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.1 230 KV Transmission line Bruce to Hanover/Orangeville:
5

- 6 a) Since the date of construction of each of the Towers within this 230KV
7 transmission line in the early 1960's, over 40 years ago, have any of the towers
8 and/or conduit power transmission cable/conduit lines ever had to have been
9 replaced or repaired because of an event beyond working life deterioration, and
10
11 b) If so, please particularize each technical reason for each such repair or
12 replacement, naming the present municipality, the Lot and Concession No. and
13 the 230 KV tower number as presently so numbered by HONI on its current photo
14 base mapping as provided, the date of such event involving loss repair and/or
15 replacement?
16
17

18 *Response*
19

20 The only event beyond working life deterioration was a tornado that occurred in May 31,
21 1985, some 23 years ago. Several towers near the town of Grand Valley were destroyed.
22 The level of detailed information requested is not available.
23

Fallis INTERROGATORY #43 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

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Ref B/Tab 6/Sch2 - IESO REP – 0382

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15 whatsoever to accommodate the receipt and transmission of committed or projected wind-
16 generated electrical power.

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22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

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40 transmission line, (P. 27).

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.2 230 KV Transmission line Bruce to Owen Sound:

- 5
6 a) What was this technical reason for the construction of this 230 KV Transmission
7 Line to Owen Sound, and
8
9 b) what was/is the length of such Line, expressed in KM, and
10
11 c) what was the 'in-service date for the transmission of power along such 230 KV
12 Line?
13
14

15 *Response*

- 16
17 a) Hydro One is not aware of the specific technical reasons for construction of this
18 circuit. However, Hydro One is aware that in 1947, a 115 kV transmission line
19 was placed in service between Essa TS (near Barrie) and Owen Sound TS to
20 supply the electrical needs of the Owen Sound area. Over time, due to the
21 growing electrical demand of the communities in the Southern Georgian Bay area,
22 this line became inadequate to supply all of the demand. The 230 kV line from
23 Bruce to Owen Sound was later built to reinforce the supply to Owen Sound.
24
25 b) & c) Please refer to the table provided in Attachment 1 to Hydro One's response to
26 Fallis Interrogatory 6.
27

Fallis INTERROGATORY #44 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

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Ref B/Tab 6/Sch2 - IESO REP – 0382

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40 transmission line, (P. 27).

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.2 230 KV Transmission line Bruce to Owen Sound:

- 5
6 a) When was the construction of this 230 KV Transmission Line to Owen Sound
7 completed, and
8
9 b) what is the end location for this 230KV Transmission Line, and
10
11 c) to where is the electrical power further distributed, as transmitted by this 230KV
12 Line to Owen Sound?
13
14

15 *Response*

- 16
17 a) b) Please refer to the table provided in Attachment 1 to Hydro One's response to
18 Fallis Interrogatory 6.
19
20 c) In a power system grid, it is not possible to associate power produced from
21 specific generation with the destination of that power.
22

Fallis INTERROGATORY #45 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

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Ref B/Tab 6/Sch2 - IESO REP – 0382

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23
24 **Preamble:**

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41
42 Preliminmy IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.2 230 KV Transmission line Bruce to Owen Sound:

5
6 What was the maximum design transmission capacity of this 230 KV Line to Owen
7 Sound, expressed in MW/h, when it was originally put into service?

8
9
10 *Response*

11
12 Please refer to the table provided in Attachment 1 to Hydro One's response to Fallis
13 Interrogatory 6.

14

Fallis INTERROGATORY #46 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

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Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

System Impact Assessment Report - March 27, 2007 of IESO:

1 This SIA Report does not make any statement or calculation anywhere therein the of
2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1),that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

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6 The SIA Report states (p. 11 - para. 9), that the construction ofthe new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eights
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission ofcommitted or projected wind-
16 generated electrical power.

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18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 of the Bruce is required as soon as possible to accommodate, additional generation
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22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

25
26 An Assessment of the Adequacy of Generation and Transmission Facilities to Meet
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31 Units 1& 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
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36 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
37 shunt capacitor and a conversion ofcertain Nanticoke Units to synchronous condenser
38 should be sufficient to enhance transfer capability of the existing transmission facilities to
39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.2 230 KV Transmission line Bruce to Owen Sound:

5
6 What has been the maximum sustained electrical power transmission along this existing
7 230 KV Line to Owen Sound, expressed in MW/h ?
8

9
10 *Response*

11
12 Hydro One assumes that “maximum sustained electrical power transmission” means peak
13 power transferred over the circuit during one hour. Analysis of power flow records
14 dating back to 1977 would be required to fully address this question. This information is
15 not available. For the design capacity of the circuit, and for power flow information for the
16 year 2007, please refer to the table provided in Attachment 1 to Hydro One’s response to
17 Fallis Interrogatory 6.
18

Fallis INTERROGATORY #47 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

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Ref B/Tab 6/Sch2 - IESO REP – 0382

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4 KV line will have no materially adverse effect on the IESO-controlled grid.

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8 units at the Bruce complex and all of the committed wind turbine projects...

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3

4 A.3.2 230 KV Transmission line Bruce to Owen Sound:

5

6 Did this 230 KV line to Owen Sound have the design capacity to transmit 1,538 MW/h as
7 might be produced from the either Bruce 'A' or Bruce 'B'. ?

8

9

10 *Response*

11

12 No.

13

Fallis INTERROGATORY #48 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.2 230 KV Transmission line Bruce to Owen Sound:
5

- 6 a) What is the present maximum transmission capacity of this 230 KV Transmission
7 line, to Owen Sound expressed in MW/h, and
8
9 b) If it is lower than the original design transmission capacity, why, and,
10
11 c) If so, are there any technical reasons why this 230 KV Line to Owen Sound
12 cannot be refurbished to return it to its original design transmission capacity, and
13
14 d) If so, what are those technical reasons?
15

16
17 **Response**
18

- 19 a) Please refer to the table provided in Attachment 1 to Hydro One's response to
20 Fallis Interrogatory 6.
21
22 b) to d) The present and original capacities are the same. For the differences between
23 transmission design capacity and transmission transfer capabilities please refer to
24 Hydro One's response to Fallis Interrogatory 101 (e).
25

Fallis INTERROGATORY #49 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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Ref B/Tab 6/Sch2 - IESO REP – 0382

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.2 230 KV Transmission line Bruce to Owen Sound:

- 5
6 a) Is this 230 KV Transmission Line to Owen Sound dedicated to transmit from any
7 particular Unit at the present time, from either Bruce 'A' or Bruce 'B', and
8
9 b) If so, from which dedicated Units at Bruce 'A' and/or Bruce "B"?

10
11
12 *Response*

13
14 No.
15

Fallis INTERROGATORY #50 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3

4 A.3.2 230 KV Transmission line Bruce to Owen Sound:

5

6 Are any of the 230 KV Transmission Line towers in this Line to Owen Sound which were
7 constructed over 30 years ago in present need of replacement or refurbishment?

8

9

10 *Response*

11

12 No.

13

Fallis INTERROGATORY #51 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
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1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.2 230 KV Transmission line Bruce to Owen Sound:

5
6 a) Was a working life cycle ever originally established for the 230KV Transmission
7 towers constructed for this 230 KV Line to Owen Sound, and

8
9 b) If so what then was the forward calendar date for the end of such working life
10 expectancy for the 230 KV Towers to Owen Sound, ?

11
12
13 **Response**

14
15 Please refer to Hydro One's response to Fallis Interrogatory 39.

16

Fallis INTERROGATORY #52 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
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38 should be sufficient to enhance transfer capability of the existing transmission facilities to
39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

41
42 Preliminmy IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.2 230 KV Transmission line Bruce to Owen Sound:

- 5
6 a) What is the present working life cycle expectancy for the existing 230 KV Towers to
7 Owen Sound within this existing 230 KV Corridor? , and
8
9 b) what is the forward calendar date now utilized as the date after which the existing 230
10 KV Line Towers to Owen Sound will no longer be licensed for use by HONI ?
11

12
13 *Response*

14
15 Please refer to Hydro One's response to Fallis Interrogatory 39.
16

Fallis INTERROGATORY #53 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

Ref. Bruce Power New Build Project -for Bruce "C" - Application for construction at the Bruce of a 4,000 MW - 4 Nuclear Reactor Power Generation system - as submitted to the Canadian Nuclear Safety Commission in December of 2006, with a request to approve a full 3 year environmental impact study;

Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

System Impact Assessment Report - March 27, 2007 of IESO:

1 This SIA Report does not make any statement or calculation anywhere therein the of
2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1),that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction ofthe new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eights
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission ofcommitted or projected wind-
16 generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 of the Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels ofthe existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

25
26 An Assessment of the Adequacy of Generation and Transmission Facilities to Meet
27 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
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29
30 This Report was prepared by IESO in August 1995, contemplating the return to service of
31 Units 1& 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
34 Govt's coal shutdown timeframe, (P. iii).

35
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37 shunt capacitor and a conversion ofcertain Nanticoke Units to synchronous condenser
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1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.2 230 KV Transmission line Bruce to Owen Sound:
5

- 6 a) What is the present working life cycle expectancy for each of the existing 230 KV
7 power cable/conduit lines as strung between each of the 230 KV Towers to Owen
8 Sound within this existing 230 KV Corridor, and
9
10 b) What is the forward calendar date now utilized as the date after which each of the
11 existing 230 KV power cable/conduit lines as strung between each of the 230 KV
12 Towers to Owen Sound as located suspended from such 230 KV Towers, within
13 this existing 230 KV Corridor?
14
15

16 **Response**
17

18 Please refer to Hydro One's response to Fallis Interrogatory 39.
19

Fallis INTERROGATORY #54 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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Preamble:

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Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

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3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1), that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction of the new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eight
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission of committed or projected wind-
16 generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 of the Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels of the existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

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32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
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37 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
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39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

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42 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.2 230 KV Transmission line Bruce to Owen Sound:
5

- 6 a) Since the date of construction of each of the Towers within this 230KV
7 transmission line in the '70s or '80s, over 25 years ago, have any of the towers
8 and/or conduit power transmission cable/conduit lines ever had to have been
9 replaced or repaired because of an event beyond working life deterioration, and
10
11 b) if so, please particularize each technical reason for each such repair or
12 replacement, naming the present municipality, the Lot and Concession No. and
13 the 230 KV tower number as presently so numbered by HONI on its current photo
14 base mapping as provided, the date of such event involving loss repair and/or
15 replacement?
16

17
18 *Response*
19

20 No.
21

Fallis INTERROGATORY #55 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

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Preamble:

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Ref B/Tab 6/Sch2 - IESO REP – 0382

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Preamble:

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4 KV line will have no materially adverse effect on the IESO-controlled grid.

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13 transmission lines, existing or projected, nor makes any recommendations for the
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15 whatsoever to accommodate the receipt and transmission of committed or projected wind-
16 generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 of the Bruce is required as soon as possible to accommodate, additional generation
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21 Report fails to state what are the present transfer capabilities levels of the existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

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38 should be sufficient to enhance transfer capability of the existing transmission facilities to
39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

41
42 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Detwiler:

- 5
6 a) What was this technical reason for the construction of this 230 KV Transmission
7 Line to Detweiler, and
8
9 b) What was/is the length of such Line, expressed in KM, and
10
11 c) What was the in-service date for the transmission of power along such 230 KV
12 Line?
13
14

15 *Response*

- 16
17 a) Hydro One is not aware of the specific technical reason for the construction of
18 this circuit. The Bruce to Seaforth and Seaforth to Detweiler circuits were
19 constructed and placed in service over 33 years ago. Hydro One is aware that the
20 line was constructed to serve the power needs of communities along the eastern
21 shore of Lake Huron and to provide a transmission connection between the
22 Kitchener Waterloo area and Bruce.
23
24 b)- c) Please refer to the table provided in Attachment 1 to Hydro One's response to
25 Fallis Interrogatory 6.
26

Fallis INTERROGATORY #56 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

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HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

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Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

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2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1), that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction of the new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eight
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission of committed or projected wind-
16 generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 of the Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels of the existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

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24 **Preamble:**

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32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
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35
36 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
37 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
38 should be sufficient to enhance transfer capability of the existing transmission facilities to
39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

41
42 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Detwiler:

- 5
6 a) When was this construction of this 230 KV Transmission Line to Detweiler
7 completed, and
8
9 b) What is the end location for this 230KV Transmission Line, and
10
11 c) To where is the electrical power further distributed, as transmitted by this 230KV
12 Line to Detweiler?
13
14

15 *Response*

- 16
17 a) b) Please refer to the table provided in Attachment 1 to Hydro One's response to
18 Fallis Interrogatory 6.
19
20 c) In a power system grid, it is not possible to associate power produced from
21 specific generation with the destination of that power.
22

Fallis INTERROGATORY #57 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

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10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
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13 transmission lines, existing or projected, nor makes any recommendations for the
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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Detwiler:

5
6 What was the maximum design transmission capacity of this 230 KV Line to Detweiler,
7 expressed in MW/h, when it was originally put into service?

8
9
10 *Response*

11
12 Please refer to the table provided in Attachment 1 to Hydro One's response to Fallis
13 Interrogatory 6.

14

Fallis INTERROGATORY #58 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Detwiler:

5
6 What has been the maximum sustained electrical power transmission along this existing
7 230 KV Line to Detweiler, expressed in MW/h ?
8

9
10 *Response*

11
12 Hydro One assumes that “maximum sustained electrical power transmission” means peak
13 power transferred over the circuit during one hour. Analysis of power flow records
14 dating back to 1975 would be required to fully address this question. This information is
15 not available. For the design capacity of the circuit, and for power flow information for
16 the year 2007, please refer to the table provided in Attachment 1 to Hydro One’s response
17 to Fallis Interrogatory 6.
18

Fallis INTERROGATORY #59 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

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Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

System Impact Assessment Report - March 27, 2007 of IESO:

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2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1), that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction of the new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eight
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission of committed or projected wind-
16 generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 of the Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels of the existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

25
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30 This Report was prepared by IESO in August 1995, contemplating the return to service of
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37 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
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40 transmission line, (P. 27).

41
42 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3

4 A.3.3 230 KV Transmission line Bruce to Detwiler:

5

6 Did this 230 KV line to Detweiler have the design capacity to transmit 1,538MW/h as
7 might be produced from the either Bruce 'A' or Bruce 'B'. ?

8

9

10 *Response*

11

12 No.

13

Fallis INTERROGATORY #60 List 1

Interrogatory

Issues:

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41
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1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Detwiler:

- 5
6 a) What is the present maximum transmission capacity of this 230 KV Transmission
7 line to Detweiler, expressed in MW/h, and
8
9 b) If it is lower than the original design transmission capacity, why, and,
10
11 c) If so, are there any technical reasons why this 230 KV Line to Detweiler cannot
12 be refurbished to return it to its original design transmission capacity, and
13
14 d) If so, what are those technical reasons?
15

16
17 **Response**

- 18
19
20 (a) Please refer to the table provided in Attachment 1 to Hydro One's response to Fallis
21 Interrogatory 6.
22
23 (b) through (d) The present and original capacities are the same. For the differences
24 between transmission design capacity and transmission transfer
25 capabilities please refer to Hydro One's Response to Fallis Interrogatory
26 101 (e).
27

Fallis INTERROGATORY #61 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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Ref B/Tab 6/Sch2 - IESO REP – 0382

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Detwiler:

5
6 a) Is this 230 KV Transmission Line to Detweiler dedicated to transmit from any
7 particular Unit at the present time, from either Bruce 'A' or Bruce 'B', and

8
9 b) If so ,from which dedicated Units at Bruce 'A' and/or Bruce "B"?

10
11
12 *Response*

13
14 No.

Fallis INTERROGATORY #62 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
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2 incorporated without the need for any new transmission lines

3

4 A.3.3 230 KV Transmission line Bruce to Detwiler:

5

6 Are any of the 230 KV Transmission Line towers in this Line to Detweiler which were
7 constructed over 25 years ago in present need of replacement or refurbishment?

8

9

10 *Response*

11

12 No.

Fallis INTERROGATORY #63 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
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1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Detwiler:

5
6 a) Was a working life cycle ever originally established for the 230KVTransmission
7 towers constructed for this 230 KV Line to Detweiler, and

8
9 b) If so what then was the forward calendar date for the end of such working life
10 expectancy for the 230 KV Towers to Detweiler, ?

11
12
13 **Response**

14
15 Please refer to Hydro One's response to Fallis Interrogatory 39.

Fallis INTERROGATORY #64 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
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3
4 A.3.3 230 KV Transmission line Bruce to Detwiler:

- 5
6 a) What is the present working life cycle expectancy for the existing 230 KV Towers
7 to Detweiler within this existing 230 KV Corridor, and
8
9 b) What is the forward calendar date now utilized as the date after which the existing
10 230 KV Line Towers to Detweiler will no longer be licensed for use by HONI?
11

12
13 *Response*

14
15 Please refer to Hydro One's response to Fallis Interrogatory 39.

Fallis INTERROGATORY #65 List 1

Interrogatory

Issues:

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13 transmission lines, existing or projected, nor makes any recommendations for the
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15 whatsoever to accommodate the receipt and transmission ofcommitted or projected wind-
16 generated electrical power.

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19 of the Bruce is required as soon as possible to accommodate, additional generation
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22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

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37 shunt capacitor and a conversion ofcertain Nanticoke Units to synchronous condenser
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40 transmission line, (P. 27).

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42 Preliminmy IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Detwiler:

- 5
6 a) What is the present working life cycle expectancy for each of the existing 230 KV
7 power cable/conduit lines as strung between each of the 230 KV Towers to
8 Detweiler within this existing 230 KV Corridor, and
9
10 b) what is the forward calendar date now utilized as the date after which each of the
11 existing 230 KV power cable/conduit lines as strung between each of the 230 KV
12 Towers to Detweiler as located suspended from such 230 KV Towers, within this
13 existing 230 KV Corridor?
14

15
16 **Response**

17
18 Please refer to Hydro One's response to Fallis Interrogatory 39.

Fallis INTERROGATORY #66 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

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Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

System Impact Assessment Report - March 27, 2007 of IESO:

1 This SIA Report does not make any statement or calculation anywhere therein the of
2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1), that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction of the new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eight
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission of committed or projected wind-
16 generated electrical power.

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Detwiler:

- 5
6 a) Since the date of construction of each of the Towers within this 230KV
7 transmission Line in the '70s or '80s to Detweiler, over 25 years ago, have any of
8 the towers and/or conduit power transmission cable/conduit lines ever had to have
9 been replaced or repaired because of an event beyond working life deterioration,
10 and
11
12 b) if so, please particularize each technical reason for each such repair or
13 replacement, naming the present municipality, the Lot and Concession No. and
14 the 230 KV tower number as presently so numbered by HONI on its current photo
15 base mapping as provided, the date of such event involving loss repair and/or
16 replacement?
17
18

19 *Response*

20
21 No.

Fallis INTERROGATORY #67 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

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The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Milton:

- 5
6 a) what was/is the length of such Line, expressed in KM, and
7
8 b) what was the 'in-service date for the transmission of power along such 500 KV
9 Transmission Line to Milton?
10

11
12 **Response**

13
14 Please refer to the table provided in Attachment 1 to Hydro One's response to Fallis
15 Interrogatory 6.
16

Fallis INTERROGATORY #68 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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40 transmission line, (P. 27).

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3

4 A.3.3 230 KV Transmission line Bruce to Milton:

5

6 Was this 500 KV Transmission Line to Milton built originally to transmit power
7 generated from the the combined 4 Units 1,2,3, and 4, located at Bruce 'A'?

8

9

10 *Response*

11

12 Yes.

Fallis INTERROGATORY #69 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Milton:

5
6 What was the maximum design transmission capacity of this 500 KV Line to Milton,
7 expressed in MW/h, when it was originally put into service?

8
9
10 *Response*

11
12 Please refer to the table provided in Attachment 1 to Hydro One's response to Fallis
13 Interrogatory 6.

14

Fallis INTERROGATORY #70 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
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1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Milton:

5
6 What has been the maximum sustained electrical power transmission along this existing
7 500 KV Line to Milton, expressed in MW/h ?
8

9
10 *Response*

11
12 Hydro One assumes that “maximum sustained electrical power transmission” means peak
13 power transferred over the circuit during one hour. Analysis of power flow records
14 dating back to 1983 would be required to fully address this question. This information is
15 not available. For the design capacity of the circuit, and for power flow information for
16 the year 2007, please refer to the table provided in Attachment 1 to Hydro One’s response
17 to Fallis Interrogatory 6.

Fallis INTERROGATORY #71 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
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1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Milton:

5
6 HONI has published and disseminated printed material in its submission to the Minister
7 of the Environment for Approval under the Environmental Assessment Act that states in
8 writing that the proposed 500 KV line as proposed in this application for leave to
9 construct will have a transmission capacity, expressed inMW/h, of 3,000 MW/h.

- 10
11 a) Does the existing 500KV line constructed from the Bruce to Milton in the late
12 '70s, some 30 years ago, have the present transmission capacity to transmit 3,000
13 MW/h, and
14
15 b) If not - why not, and
16
17 c) If not now but it previously had that transmission capacity is there any present
18 technical reason why such original transmission capacity cannot be restored to the
19 500 KV Line by replacement and/or refurbishment.
20

21
22 **Response**

23
24 (a) Transmission capacity of the circuit has not changed over time. Please refer to the
25 table provided in Attachment 1 to Hydro One's response to Fallis Interrogatory 6 for
26 circuit capacity levels. For the differences between transmission design capacity and
27 transmission transfer capability, please refer to the response to Fallis Interrogatory
28 101 (e).

29
30 (b) Not applicable.
31

Fallis INTERROGATORY #73 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

Ref. Bruce Power New Build Project -for Bruce "C" - Application for construction at the Bruce of a 4,000 MW - 4 Nuclear Reactor Power Generation system - as submitted to the Canadian Nuclear Safety Commission in December of 2006, with a request to approve a full 3 year environmental impact study;

Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

System Impact Assessment Report - March 27, 2007 of IESO:

1 This SIA Report does not make any statement or calculation anywhere therein the of
2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1), that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction of the new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eight
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission of committed or projected wind-
16 generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 of the Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels of the existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

25
26 An Assessment of the Adequacy of Generation and Transmission Facilities to Meet
27 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
28 - dated August 2005

29
30 This Report was prepared by IESO in August 1995, contemplating the return to service of
31 Units 1 & 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
34 Govt's coal shutdown timeframe, (P. iii).

35
36 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
37 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
38 should be sufficient to enhance transfer capability of the existing transmission facilities to
39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

41
42 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Milton:

5
6 Did the 500 KV line to Milton have the design capacity to transmit 3,000 MW/h of
7 generation power or more as might be produced from the 4 units at either of Bruce 'A' of
8 Bruce 'B' together with all additional 200MW/h generation capacity from the Douglas
9 Point Reactor, expressed as MW/h?

10
11
12 *Response*

13
14 Transmission capability out of the Bruce area is not determined by simply adding the
15 MW capacity of each circuit. The transfer capability depends on prevailing system
16 conditions. Please see the response to Fallis Interrogatory 101 (e). Based on prevailing
17 system conditions at that time, all of the transmission circuits out of Bruce had the
18 required transmission capability to meet the generation requirements from Bruce GS.
19

Fallis INTERROGATORY #74 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

Ref. Bruce Power New Build Project -for Bruce "C" - Application for construction at the Bruce of a 4,000 MW - 4 Nuclear Reactor Power Generation system - as submitted to the Canadian Nuclear Safety Commission in December of 2006, with a request to approve a full 3 year environmental impact study;

Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

System Impact Assessment Report - March 27, 2007 of IESO:

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2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1), that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction of the new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eight
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission of committed or projected wind-
16 generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 of the Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels of the existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

25
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27 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
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30 This Report was prepared by IESO in August 1995, contemplating the return to service of
31 Units 1 & 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
34 Govt's coal shutdown timeframe, (P. iii).

35
36 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
37 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
38 should be sufficient to enhance transfer capability of the existing transmission facilities to
39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

41
42 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Milton:

- 5
6 a) What is the present maximum transmission capacity of this 500KV Transmission
7 Line, to Milton expressed in MW/h, and
8
9 b) If it is lower than the original design transmission capacity, why, and,
10
11 c) If so, are there any technical reasons why this 500 KV Line cannot be refurbished
12 to return it to its original design transmission capacity, and
13
14 d) If so, what are those technical reasons ?
15

16
17 **Response**

18
19 Please refer to the table provided in Attachment 1 to Hydro One's response to Fallis
20 Interrogatory 6. The maximum capacity has not changed from the original design
21 capacity.
22

1
2 **Fallis INTERROGATORY #75 List 1**

3
4 **Interrogatory**

5
6 **Issues:**

- 7 1.1. Has the need for the proposed project been established?
8
9 1.3. Have all appropriate project risk factors pertaining to the need and justification (including
10 but not limited to forecasting, technical and financial risks) been taken into consideration in
11 planning this project?
12
13 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably
14 foreseeable future needs of significantly increased or significantly reduced generation in
15 the Bruce area?

16
17 Ref. B/Tab 1 /Sch3

18
19 **Preamble:**

20
21 Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

22
23 HONI states that the present transmission system from the Bruce has the capability to
24 transmit about 5,000 MW of the generation from the Bruce area.- and that there is a
25 shortfall of 3,100 MW in needed transmission capacity.

26
27 Ref. Bruce Power New Build Project -for Bruce "C" - Application for construction at the
28 Bruce of a 4,000 MW - 4 Nuclear Reactor Power Generation system - as submitted
29 to the Canadian Nuclear Safety Commission in December of 2006, with a request to
30 approve a full 3 year environmental impact study;

31
32 **Preamble:**

33
34 The Project Description by Bruce Power proposes to have the Bruce "C" project
35 generating power initially in January of 2015 adding one of 4 reactors in each year
36 thereafter for completion in 2019, From 2011 the continuing maximum generation
37 capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being
38 brought into service in January of 2015

39
40 Ref B/Tab 6/Sch2 - IESO REP – 0382

41
42 B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

43
44 **Preamble:**

45

1 System Impact Assessment Report - March 27, 2007 of IESO:

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3 combined transmission capacity, expressed in MW of the three existing 230KV and two
4 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1), that the new 500
5 KV line will have no materially adverse effect on the IESO-controlled grid.

6
7 The SIA Report states (p. 11 - para. 9), that the construction of the new 500 KV line is
8 intended to allow additional generating capacity to be incorporated beyond the eight
9 units at the Bruce complex and all of the committed wind turbine projects...

10
11 The SIA Report does not make any schematic or analytical provision therein to receive at
12 the Bruce Complex or elsewhere in grid system the any of the committed or projected
13 wind-generated electrical power for transmission to any of the 230KV or 500KV
14 transmission lines, existing or projected, nor makes any recommendations for the
15 construction at the Bruce Complex or elsewhere of any switchyard facilities to
16 whatsoever to accommodate the receipt and transmission of committed or projected wind-
17 generated electrical power.

18
19 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
20 of the Bruce is required as soon as possible to accommodate, additional generation
21 expected from the new projects and the refurbished Bruce nuclear units. That ORO
22 Report fails to state what are the present transfer capabilities levels of the existing 5
23 transmission lines, and what the transfer capability levels must attain, expressed in MW.

24
25 **Preamble:**

26
27 An Assessment of the Adequacy of Generation and Transmission Facilities to Meet
28 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
29 - dated August 2005

30
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32 Units 1 & 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
33 assessment of the demand-supply picture for the province and to provide a plan
34 identifying the timing and requirements for system changes needed to meet the Ont.
35 Govt's coal shutdown timeframe, (P. iii).

36
37 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
38 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
39 should be sufficient to enhance transfer capability of the existing transmission facilities to
40 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
41 transmission line. (P. 27).

42
43 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Milton:

- 5
6 a) Is this 500 KV Transmission Line to Milton dedicated to transmit from any
7 particular Unit at the present time, from either Bruce 'A' or Bruce 'B', and
8
9 b) if so , from which dedicated Units at Bruce 'A' and/or Bruce "B"?

10
11
12 *Response*

13
14 No.

Fallis INTERROGATORY #76 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

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Preamble:

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Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

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2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1), that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

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8 units at the Bruce complex and all of the committed wind turbine projects...

9
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12 wind-generated electrical power for transmission to any of the 230KV or 500KV
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14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission of committed or projected wind-
16 generated electrical power.

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20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels of the existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

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39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

41
42 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Milton:

5
6 a) Are any of the 500 KV Transmission Line towers which were constructed about
7 30 years ago in present need of replacement or refurbishment, and

8
9 b) If so , which towers are in such need, all of the towers being presently numbered
10 by HONI?

11
12
13 Response

14
15 No.

Fallis INTERROGATORY #77 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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6 The SIA Report states (p. 11 - para. 9), that the construction ofthe new 500 KV line is
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8 units at the Bruce complex and all of the committed wind turbine projects...

9
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13 transmission lines, existing or projected, nor makes any recommendations for the
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15 whatsoever to accommodate the receipt and transmission ofcommitted or projected wind-
16 generated electrical power.

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21 Report fails to state what are the present transfer capabilities levels ofthe existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

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24 **Preamble:**

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38 should be sufficient to enhance transfer capability of the existing transmission facilities to
39 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
40 transmission line, (P. 27).

41
42 Preliminmy IESO studies indicate that the proposed 500KV series capacitors on the lines
43 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Milton:

- 5
6 a) Was a working life cycle ever originally established for the 500 KV Transmission
7 towers constructed for this 500 KV Line this Line to Milton?, and
8
9 b) if so what then was the forward calendar date for the end of such working life
10 expectancy for the 500 KV Towers themselves?
11

12
13 **Response**

14
15 Please refer to Hydro One's response to Fallis Interrogatory 39.
16

Fallis INTERROGATORY #78 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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13 transmission lines, existing or projected, nor makes any recommendations for the
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15 whatsoever to accommodate the receipt and transmission ofcommitted or projected wind-
16 generated electrical power.

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21 Report fails to state what are the present transfer capabilities levels ofthe existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

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41 transmission line, (P. 27).

42
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44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Milton:

- 5
6 a) What is the present working life cycle expectancy for the existing 500 KV Towers
7 within this existing 500 KV Corridor to Milton, and
8
9 b) what is the forward calendar date now utilized as the date after which the existing
10 500 KV Line Towers will no longer be licensed for use by HONI ?
11

12
13 **Response**

14
15 Please refer to Hydro One's response to Fallis Interrogatory 39.
16

Fallis INTERROGATORY #79 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

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Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

System Impact Assessment Report - March 27, 2007 of IESO:

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2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1),that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction ofthe new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eights
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission ofcommitted or projected wind-
16 generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 ofthe Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels ofthe existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

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26 An Assessment of the Adequacy of Generation and Transmission Facilities to Meet
27 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
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31 ofUnits 1 & 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
32 assessment of the demand-supply picture for the province and to provide a plan
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38 shunt capacitor and a conversion ofcertain Nanticoke Units to synchronous condenser
39 should be sufficient to enhance transfer capability of the existing transmission facilities to
40 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
41 transmission line, (P. 27).

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44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Milton:

- 5
6 a) What is the present working life cycle expectancy for each of the existing 500 KV
7 power cable/conduit lines as strung between each of the 500KV Towers within
8 this existing 500 KV Corridor to Longwood, and
9
10 b) what is the forward calendar date now utilized as the date after which each of the
11 existing 500KV power cable/conduit lines as strung between each of the 500KV
12 Towers as located suspended from such 500 KV Towers, within this existing 500
13 KV Corridor to Longwood ?
14

15
16 **Response**

17
18 Please refer to Hydro One's response to Fallis Interrogatory 39

Fallis INTERROGATORY #80 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

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Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

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24 **Preamble:**

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32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
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44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.3 230 KV Transmission line Bruce to Milton:

- 5
6 a) Since the date of construction of each of the Towers within this 500KV
7 transmission line in the late 1970'2, almost 30 years ago, have any of the towers
8 and/or conduit power transmission cable/conduit lines ever had to have been
9 replaced or repaired because of an event beyond working life deterioration, and
10
11 b) if so, please particularize each technical reason for each such repair or
12 replacement, naming the present municipality, the Lot and Concession No. and
13 the 500 KV tower number as presently so numbered by HONI on its current photo
14 base mapping as provided, the date of such event involving loss repair and/or
15 replacement
16

17
18 *Response*

19
20 The only event beyond working life deterioration was a tornado that occurred on May 31,
21 1985, some 23 years ago. Several towers near the town of Grand Valley were destroyed.
22 The level of detailed information requested is not available.

Fallis INTERROGATORY #81 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

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HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

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Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

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22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

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32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
34 Govt's coal shutdown timeframe, (P. iii).

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37 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
38 shunt capacitor and a conversion ofcertain Nanticoke Units to synchronous condenser
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44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.4 500 KV Transmission line Bruce to Longwood:

- 5
6 a) What was/is the length of such Line, expressed in KM, and
7
8 b) What was the 'in-service date for the transmission of power along such 500 KV
9 Transmission Line to Longwood?
10

11
12 **Response**

13
14 Please refer to the table provided in Attachment 1 to Hydro One's response to Fallis
15 Interrogatory 6.

Fallis INTERROGATORY #82 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
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44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

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2 incorporated without the need for any new transmission lines

3
4 A.3.4 500 KV Transmission line Bruce to Longwood:

5
6 Was this 500 KV Transmission Line to Longwood built originally to transmit power
7 generated from the the combined 4 Units 1,2,3, and 4, located at Bruce 'A ' and/or Bruce
8 'B'?

9
10
11 *Response*

12
13 Yes.

Fallis INTERROGATORY #83 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.4 500 KV Transmission line Bruce to Longwood:

5
6 What was the maximum design transmission capacity of this 500 KV Line to Longwood,
7 expressed in MW/h, when it was originally put into service?

8
9 *Response*

10
11 Please refer to the table provided in Attachment 1 to Hydro One's response to Fallis
12 Interrogatory 6.

Fallis INTERROGATORY #84 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
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1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.4 500 KV Transmission line Bruce to Longwood:

5
6 What has been the maximum sustained electrical power transmission along this existing
7 500 KV Line to Longwood, expressed in MW/h ?

8
9
10 *Response*

11
12 Hydro One assumes that “maximum sustained electrical power transmission” means peak
13 power transferred over the circuit during one hour. Analysis of power flow records
14 dating back to 1990 would be required to fully address this question. This information is
15 not available. For the design capacity of the circuit, and for power flow information for
16 the year 2007, please refer to the table provided in Attachment 1 to Hydro One’s response
17 to Fallis Interrogatory 6.

Fallis INTERROGATORY #85 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
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10 The SIA Report does not make any schematic or analytical provision therein to receive at
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12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission of committed or projected
16 wind-generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 ofthe Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels ofthe existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

25
26 An Assessment of the Adequacy of the Generation and Transmission Facilities to Meet
27 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
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30 This Report was prepared by IESO in August 1995, contemplating the return to service
31 ofUnits 1 & 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
34 Govt's coal shutdown timeframe, (P. iii).

35
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37 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
38 shunt capacitor and a conversion ofcertain Nanticoke Units to synchronous condenser
39 should be sufficient to enhance transfer capability of the existing transmission facilities to
40 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
41 transmission line, (P. 27).

42
43 Preliminmy IESO studies indicate that the proposed 500KV series capacitors on the lines
44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.4 500 KV Transmission line Bruce to Longwood:

5
6 HONI has published and disseminated printed material in its submission to the Minister
7 of the Environment for Approval under the EnvironmentalAssessmentActthat states in
8 writing that the proposed 500 KV line as proposed in this application for leave to
9 construct will have a transmission capacity, expressed in MW/h, on 3,000MW/h.

- 10
11 a) Does the existing 500 KV line constructed from the Bruce to Longwood in the
12 late '70s, almost 30 years ago, have he present transmission capacity to transmit
13 3,000 MW/h, and
14
15 b) If not –why not, and
16
17 c) If not now but it previously had that transmission capacity is there any present
18 technical reason why such original transmission capacity cannot be restored to the
19 500 KV Line by replacement and/or refurbishment.
20

21
22 **Response**

23
24 The Bruce to Longwood 500kV circuit was constructed between 1987 and 1990. Please
25 refer to the response to Fallis Interrogatory #86.

Fallis INTERROGATORY #86 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

Ref. Bruce Power New Build Project -for Bruce "C" - Application for construction at the Bruce of a 4,000 MW - 4 Nuclear Reactor Power Generation system - as submitted to the Canadian Nuclear Safety Commission in December of 2006, with a request to approve a full 3 year environmental impact study;

Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

System Impact Assessment Report - March 27, 2007 of IESO:

1 This SIA Report does not make any statement or calculation anywhere therein the of
2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1),that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction ofthe new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eights
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
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15 whatsoever to accommodate the receipt and transmission of committed or projected
16 wind-generated electrical power.

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41 transmission line, (P. 27).

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44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.4 500 KV Transmission line Bruce to Longwood:

5
6 Did the 500 KV line to Longwood have the design capacity to transmit 3,000 MW/h of
7 generation power or more as might be produced from the 4 units at either of Bruce 'A' of
8 Bruce 'B' together with all additional 200MW/h generation capacity from the Douglas
9 Point Reactor, expressed as MW/h ?

10
11
12 *Response*

13
14 Please refer to the table provided in attachment 1 to the Hydro One's response to Fallis
15 Interrogatory 6 for circuit capacity levels.

Fallis INTERROGATORY #87 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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Preamble:

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44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.4 500 KV Transmission line Bruce to Longwood:

- 5
6 a) What is the present maximum transmission capacity of this 500KV Transmission
7 Line, to Longwood expressed in MW/h, and
8
9 b) If it is lower than the original design transmission capacity, why, and,
10
11 c) If so, are there any technical reasons why this 500 KV Line cannot be refurbished
12 to return it to its original design transmission capacity, and
13
14 d) If so, what are those technical reasons ?
15

16
17 **Response**

- 18
19 (a) Transmission capacity of the circuit has not changed over time. Please refer to the
20 table provided in Attachment 1 to Hydro One's response to Fallis Interrogatory 6 for
21 circuit capacity levels. For the differences between transmission design capacity and
22 transmission transfer capability, please refer to the response to Fallis Interrogatory
23 101 (e).
24
25 (b) Not applicable.

Fallis INTERROGATORY #88 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

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Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

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3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1),that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction ofthe new 500 KV line is
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37 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
38 shunt capacitor and a conversion ofcertain Nanticoke Units to synchronous condenser
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40 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
41 transmission line, (P. 27).

42
43 Preliminmy IESO studies indicate that the proposed 500KV series capacitors on the lines
44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.4 500 KV Transmission line Bruce to Longwood:

- 5
6 a) Is this 500 KV Transmission Line to Longwood dedicated to transmit from any
7 particular Unit at the present time, from either Bruce 'A' or Bruce 'B', and
8
9 b) if so, from which dedicated Units at Bruce 'A' and/or Bruce "B"?

10
11
12 *Response*

13
14 No.

Fallis INTERROGATORY #89 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

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Preamble:

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3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1),that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

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9
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44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.4 500 KV Transmission line Bruce to Longwood:

5
6 a) Are any of the 500 KV Transmission Line towers which were constructed within
7 the 500KV Line to Longwood over 25 years ago in present need of replacement
8 or refurbishment, and

9
10 b) If so , which towers are in such need, all of the towers being presently numbered
11 by HONI?

12
13
14 *Response*

15
16 No.

Fallis INTERROGATORY #90 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

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Preamble:

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44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.4 500 KV Transmission line Bruce to Longwood:

- 5
6 a) Was a working life cycle ever originally established for the 500 KV Transmission
7 towers constructed for this 500 KV Line this Line to Longwood, and
8
9 b) If so what then was the forward calendar date for the end of such working life
10 expectancy for the 500 KV Towers themselves?
11
12

13 *Response*

14
15 Please refer to Hydro One's response to Fallis Interrogatory 39.

Fallis INTERROGATORY #91 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
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35 Govt's coal shutdown timeframe, (P. iii).

36
37 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
38 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
39 should be sufficient to enhance transfer capability of the existing transmission facilities to
40 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
41 transmission line, (P. 27).

42
43 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.4 500 KV Transmission line Bruce to Longwood:

- 5
6 a) What is the present working life cycle expectancy for the existing 500 KV Towers
7 within this existing 500 KV Corridor to Longwood? , and
8
9 b) what is the forward calendar date now utilized as the date after which the existing
10 500 KV Line Towers will no longer be licensed for use by HONI ?
11
12

13 *Response*

14
15 Please refer to Hydro One's response to Fallis Interrogatory 39.

Fallis INTERROGATORY #92 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

Ref. Bruce Power New Build Project -for Bruce "C" - Application for construction at the Bruce of a 4,000 MW - 4 Nuclear Reactor Power Generation system - as submitted to the Canadian Nuclear Safety Commission in December of 2006, with a request to approve a full 3 year environmental impact study;

Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

System Impact Assessment Report - March 27, 2007 of IESO:

1 This SIA Report does not make any statement or calculation anywhere therein the of
2 combined transmission capacity, expressed in MW of the three existing 230KV and two
3 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1),that the new 500
4 KV line will have no materially adverse effect on the IESO-controlled grid.

5
6 The SIA Report states (p. 11 - para. 9), that the construction ofthe new 500 KV line is
7 intended to allow additional generating capacity to be incorporated beyond the eights
8 units at the Bruce complex and all of the committed wind turbine projects...

9
10 The SIA Report does not make any schematic or analytical provision therein to receive at
11 the Bruce Complex or elsewhere in grid system the any of the committed or projected
12 wind-generated electrical power for transmission to any of the 230KV or 500KV
13 transmission lines, existing or projected, nor makes any recommendations for the
14 construction at the Bruce Complex or elsewhere of any switchyard facilities to
15 whatsoever to accommodate the receipt and transmission ofcommitted or projected wind-
16 generated electrical power.

17
18 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
19 ofthe Bruce is required as soon as possible to accommodate, additional generation
20 expected from the new projects and the refurbished Bruce nuclear units. That ORO
21 Report fails to state what are the present transfer capabilities levels ofthe existing 5
22 transmission lines, and what the transfer capability levels must attain, expressed in MW.

23
24 **Preamble:**

25
26 An Assessment of the Adequacy of Generation and Transmission Facilities to Meet
27 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
28 - dated August 2005

29
30 This Report was prepared by IESO in August 1995, contemplating the return to service
31 ofUnits 1 & 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
32 assessment of the demand-supply picture for the province and to provide a plan
33 identifying the timing and requirements for system changes needed to meet the Ont.
34 Govt's coal shutdown timeframe, (P. iii).

35
36
37 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
38 shunt capacitor and a conversion ofcertain Nanticoke Units to synchronous condenser
39 should be sufficient to enhance transfer capability of the existing transmission facilities to
40 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
41 transmission line, (P. 27).

42
43 Preliminmy IESO studies indicate that the proposed 500KV series capacitors on the lines
44 emanating from the Bruce Complex should sufficiently enhance the transfer capability of

1 the existing transmission facilities to allow the additional capacity at Bruce GS to be
2 incorporated without the need for any new transmission lines

3
4 A.3.4 500 KV Transmission line Bruce to Longwood:

- 5
6 a) What is the present working life cycle expectancy for each of the existing 500 KV
7 power cable/conduit lines as strung between each of the 500 KV Towers within
8 this existing 500 KV Corridor to Longwood, and
9
10 b) What is the forward calendar date now utilized as the date after which each of the
11 existing 500KV power cable/conduit lines as strung between each of the 500KV
12 Towers as located suspended from such 500 KV Towers, within this existing 500
13 KV Corridor to Longwood ?
14

15
16 **Response**

17
18 Please refer to Hydro One's response to Fallis Interrogatory 39.

Fallis INTERROGATORY #93 List 1

Interrogatory

Issues:

- 1.1. Has the need for the proposed project been established?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref. B/Tab 1 /Sch3

Preamble:

Statement by HONI - (p. 1, line 25 - 28, and p. 2, line 1-14)

HONI states that the present transmission system from the Bruce has the capability to transmit about 5,000 MW of the generation from the Bruce area.- and that there is a shortfall of 3,100 MW in needed transmission capacity.

Ref. Bruce Power New Build Project -for Bruce "C" - Application for construction at the Bruce of a 4,000 MW - 4 Nuclear Reactor Power Generation system - as submitted to the Canadian Nuclear Safety Commission in December of 2006, with a request to approve a full 3 year environmental impact study;

Preamble:

The Project Description by Bruce Power proposes to have the Bruce "C" project generating power initially in January of 2015 adding one of 4 reactors in each year thereafter for completion in 2019, From 2011 the continuing maximum generation capacity at the Bruce will be about 6,400 MW until January 2026 with Bruce "C" being brought into service in January of 2015

Ref B/Tab 6/Sch2 - IESO REP – 0382

B/Tab 6/Sch4 - IESO The Ontario Reliability Outlook, March, 2007 ('ORO')

Preamble:

1 System Impact Assessment Report - March 27, 2007 of IESO:

2 This SIA Report does not make any statement or calculation anywhere therein the of
3 combined transmission capacity, expressed in MW of the three existing 230KV and two
4 500KV Transmission Lines but refers only to the fact, (p. 1 - para. 1), that the new 500
5 KV line will have no materially adverse effect on the IESO-controlled grid.

6
7 The SIA Report states (p. 11 - para. 9), that the construction of the new 500 KV line is
8 intended to allow additional generating capacity to be incorporated beyond the eight
9 units at the Bruce complex and all of the committed wind turbine projects...

10
11 The SIA Report does not make any schematic or analytical provision therein to receive at
12 the Bruce Complex or elsewhere in grid system the any of the committed or projected
13 wind-generated electrical power for transmission to any of the 230KV or 500KV
14 transmission lines, existing or projected, nor makes any recommendations for the
15 construction at the Bruce Complex or elsewhere of any switchyard facilities to
16 whatsoever to accommodate the receipt and transmission of committed or projected wind-
17 generated electrical power.

18
19 In March 2007 ORO, (at p. 3 - Transmission), the IESO stated that a new 500KV line out
20 of the Bruce is required as soon as possible to accommodate, additional generation
21 expected from the new projects and the refurbished Bruce nuclear units. That ORO
22 Report fails to state what are the present transfer capabilities levels of the existing 5
23 transmission lines, and what the transfer capability levels must attain, expressed in MW.

24
25 **Preamble:**

26
27 An Assessment of the Adequacy of Generation and Transmission Facilities to Meet
28 Future Electricity Needs in Ontario - 10 year Outlook – January 2006 to December 2015
29 - dated August 2005

30
31 This Report was prepared by IESO in August 1995, contemplating the return to service
32 of Units 1 & 2 at Bruce "A" GS of 1,500 MW and was specifically produced to provide an
33 assessment of the demand-supply picture for the province and to provide a plan
34 identifying the timing and requirements for system changes needed to meet the Ont.
35 Govt's coal shutdown timeframe, (P. iii).

36
37
38 This 86 page comprehensive Report of the IESO concluded that series capacitors, a new
39 shunt capacitor and a conversion of certain Nanticoke Units to synchronous condenser
40 should be sufficient to enhance transfer capability of the existing transmission facilities to
41 allow Units 1 & 2 at Bruce 'A' GS to be incorporated without the need for any new
42 transmission line, (P. 27).
43

1 Preliminary IESO studies indicate that the proposed 500KV series capacitors on the lines
2 emanating from the Bruce Complex should sufficiently enhance the transfer capability of
3 the existing transmission facilities to allow the additional capacity at Bruce GS to be
4 incorporated without the need for any new transmission lines

5
6 A.3.4 500 KV Transmission line Bruce to Longwood:

- 7
8 a) Since the date of construction of each of the Towers within this 500KV
9 Transmission Line to Longwood over 25 years ago, have any of the towers and/or
10 conduit power transmission cable/conduit lines ever had to have been replaced or
11 repaired because of an event beyond working life deterioration, and
12
13 b) If so, please particularize each technical reason for each such repair or
14 replacement, naming the present municipality, the Lot and Concession No. and
15 the 500 KV tower number as presently numbered by HONI on its current photo
16 base mapping as provided, the date of such event involving loss repair and/or
17 replacement
18

19
20 *Response*

21
22 No.

Fallis INTERROGATORY #94 List 1

Interrogatory

Issues:

- 1.3. 1.2 Does the project qualify as a non-discretionary project as per the OEB's Filing Requirements for Transmission and Distribution Applications and if so what categories of need as referred to in Section 5.2.2 of these Filing Requirements are relevant?
- 1.4. 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?
- 1.5. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref B/Tab 6/Schedule 5/Appendix 2

B/Tab 6/Schedule 5/Appendix 4

B. General Interrogatories:

The CEO of OPA, Jann Carr wrote to Hydro One on Dec 22, 2006, (Exhibit B, Tab 6, Schedule 5, Appendix 2) and on page 2 of that letter (below Figure I) and stated therein that "The existing transmission system that transmits power from the Bruce area... has sufficient capacity for the existing generation there now, ..• a combined output of about 5,060MW." The CEO of OPA, Jan Carr, later wrote to Hydro One on March 23, 2007 (Exhibit B-6-5, Appendix 4), and therein stated at the bottom of Page 1 "Thus, the long term solution must be able to increase the transmission capability of the Bruce system from today's 5,000MW level to about 8,300MW. From this perspective, the only technically acceptable and practical solution is a new 500 KV double-circuit line from the Bruce area directly to the GTA"

Is HONI now stating that the words "transmission capability" in the last letter of OPA by Jan Carr has exactly the same meaning as "transmission capacity"?

Response

In both letters the intended message was that the transmission capability of the Bruce Area transmission system was approximately 5,000 MW. This was presented at the technical conference presentation on slide 11.

Fallis INTERROGATORY #95 List 1

Interrogatory

Issues:

- 1.2. 1.2 Does the project qualify as a non-discretionary project as per the OEB's Filing Requirements for Transmission and Distribution Applications and if so what categories of need as referred to in Section 5.2.2 of these Filing Requirements are relevant?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref B/Tab 6/Schedule 5/Appendix 2

B/Tab 6/Schedule 5/Appendix 4

B. General Interrogatories:

Would HONI now clearly state what are the correct technical answers to the following questions:

- a) What was the actual maximum transmission capacity from the Bruce Power Nuclear Facilities, on October 17, 2005, expressed in MW/h, of the combined 5 Transmission Lines, namely 2 x 500 KV lines and 3 x 230KV lines?
- b) What was the actual maximum transmission capacity from the Bruce Power Nuclear Facilities, on December 22, 2006, expressed in MW/h, of the combined 5 Transmission Lines, namely 2 x 500 KV lines and 3 x 230KV lines?
- c) What was the actual maximum transmission capacity from the Bruce Power Nuclear Facilities, on March 23rd, 2007, expressed in MW/h, of the combined 5 Transmission Lines, namely 2 x 500 KV lines and 3 x 230KV lines?
- d) What was the actual maximum transmission capacity from the Bruce Power Nuclear Facilities, on March 29th, 2007, expressed in MW/h, of the combined 5 Transmission Lines, namely 2 x 500 KV lines and 3 x 230KV lines?
- e) What is the actual maximum transmission capacity from the Bruce Power Nuclear Facilities, on October 1st, 2007, expressed in MW/h, of the combined 5 Transmission Lines, namely 2 x 500 KV lines and 3 x 230KV lines.?
- f) What is the actual maximum transmission capacity from the Bruce Power Nuclear Facilities, today, on February 25th, 2008, expressed in MW/h, of the combined 5 Transmission Lines, namely 2 x 500 KV lines and 3 x 230KV lines.?

1
2 g) Would the following statement, if it had been then made by Jan Carr, as CEO of the OPA
3 on December 22, 2006, have been a technically correct statement of fact upon which the
4 OEB, HON1 and the power consumer ratepayers of Ontario could absolutely and
5 unequivocally rely with absolute certainty as to its truthfulness and correctness, and if not
6 - why not?
7

8 "The existing transmission system that transmits power from the Bruce area . . . presently
9 only has a maximum transmission capacity for the existing generation there now, . . . a
10 combined output of about 5,060MW."
11

12 h) Would the following statement, if it had been then made by Jan Carr, as CEO of the OPA
13 on December 22, 2006, have been a technically correct statement of fact upon which the
14 OEB, HON1 and the power consumer ratepayers of Ontario could absolutely and
15 unequivocally rely with absolute certainty as to its truthfulness and correctness, and if not
16 - why not?
17

18 "Thus, the long term solution must be able to increase the maximum transmission
19 capacity of the Bruce system from today's 5,000 MW level to about 8,300 MW. From this
20 perspective, the only technically acceptable and practical solution is a new 500 KV
21 double-circuit line from the Bruce area directly to the GTA
22

23
24 **Response**
25

26 For the purposes of this question Hydro One has assumed that the term "actual maximum
27 transmission capacity" is intended to mean "actual maximum transfer capability." Actual
28 transfer capabilities are dependent upon the prevailing system conditions at each point in
29 time.
30

31 (a) On October 17, 2005 (as determined at 12:01 pm Eastern Standard time) the actual
32 maximum transfer capability of the transmission circuits identified in the question out
33 of the Bruce area was 4077 MW.
34

35 (b) On December 22, 2006 (as determined at 12:01 pm Eastern Standard time) the actual
36 maximum transfer capability of the transmission circuits identified in the question out
37 of the Bruce area was 3873 MW.
38

39 (c) On March 23, 2007 (as determined at 12:01 pm Eastern Standard time) the actual
40 maximum transfer capability of the transmission circuits identified in the question out
41 of the Bruce area was 4411 MW.
42

43 (d) On March 27, 2007 (as determined at 12:01 pm Eastern Standard time) the actual
44 maximum transfer capability of the transmission circuits identified in the question out
45 of the Bruce area was 4976 MW.
46

- 1 (e) On October 1, 2007 (as determined at 12:01 pm Eastern Standard time) the actual
2 maximum transfer capability of the transmission circuits identified in the question out
3 of the Bruce area was 4365 MW.
4
- 5 (f) On February 25, 2008 (as determined at 12:01 pm Eastern Standard time) the actual
6 maximum transfer capability of the transmission circuits identified in the question out
7 of the Bruce area was 3223 MW.
8
- 9 (g) Hydro One is not prepared to answer a hypothetical question regarding an opinion.
10 Please refer to question 94, which is a clarification made on this statement.
11
- 12 (h) See Part (g).
13

Fallis INTERROGATORY #96 List 1

Interrogatory

Issues:

- 1.2. Does the project qualify as a non-discretionary project as per the OEB's Filing Requirements for Transmission and Distribution Applications and if so what categories of need as referred to in Section 5.2.2 of these Filing Requirements are relevant?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref B/Tab 6/Schedule 5/Appendix 2

B/Tab 6/Schedule 5/Appendix 4

B. General Interrogatories:

What is the measured power loss, expressed as a percentage of MW/h between the start of power transmission at the Bruce and the 5 different termination points in 6 different Ontario municipalities of the five different transmission lines, 3 x 230 KV Lines and 2 x 500 KV Lines.

Response

Transmission losses will be dependent upon prevailing grid conditions. For the purposes of this question, Hydro One has assumed a scenario with 5,060 MW generation, no transmission circuits out of service, and peak load conditions. Under these assumptions, transmission losses were calculated at 2%.

Fallis INTERROGATORY #97 List 1

Interrogatory

Issues:

- 1.2. Does the project qualify as a non-discretionary project as per the OEB's Filing Requirements for Transmission and Distribution Applications and if so what categories of need as referred to in Section 5.2.2 of these Filing Requirements are relevant?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref B/Tab 6/Schedule 5/Appendix 2

B/Tab 6/Schedule 5/Appendix 4

B. General Interrogatories:

If the existing generation output from the Bruce, expressed in MW/h is 5,060 as stated by the OPA, what is the exact amount of power, in the aggregate, expressed in MW/h, as it joins the Ontario Grid at the ends of the 5 existing Transmission Lines from the Bruce.

Response

For generation output of 5,060 MW at the Bruce complex, 4535 MW is delivered at the ends of the 5 existing transmission lines from the Bruce. 421 MW of load is transmitted via the 2 x 230 kV lines, to serve load at the following transmission stations: Hanover, Wingham, Seaforth, and Stratford.

Fallis INTERROGATORY #98 List 1

Interrogatory

Issues:

- 1.2. Does the project qualify as a non-discretionary project as per the OEB's Filing Requirements for Transmission and Distribution Applications and if so what categories of need as referred to in Section 5.2.2 of these Filing Requirements are relevant?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref B/Tab 6/Schedule 5/Appendix 2

B/Tab 6/Schedule 5/Appendix 4

B. General Interrogatories:

Should the final siting of the Towers to be constructed for the proposed 500 KV Transmission Line in this Application (and for which leave may be granted by the OEB), require that the transmission corridor cross over the existing 500 KV line as built in the late 1970's from Bruce to Colbeck to Milton,

- a) is there an existing design template for such a turning tower, both at the initiation of the cross-over and at the end of the cross-over ?
- b) how high and wide is the tower ?
- c) how much measured distance must the crossing power lines stay removed and above the existing 500KV Transmission Line being crossed ? and
- d) what is the estimated cost of construction of each such type crossing-turning tower.

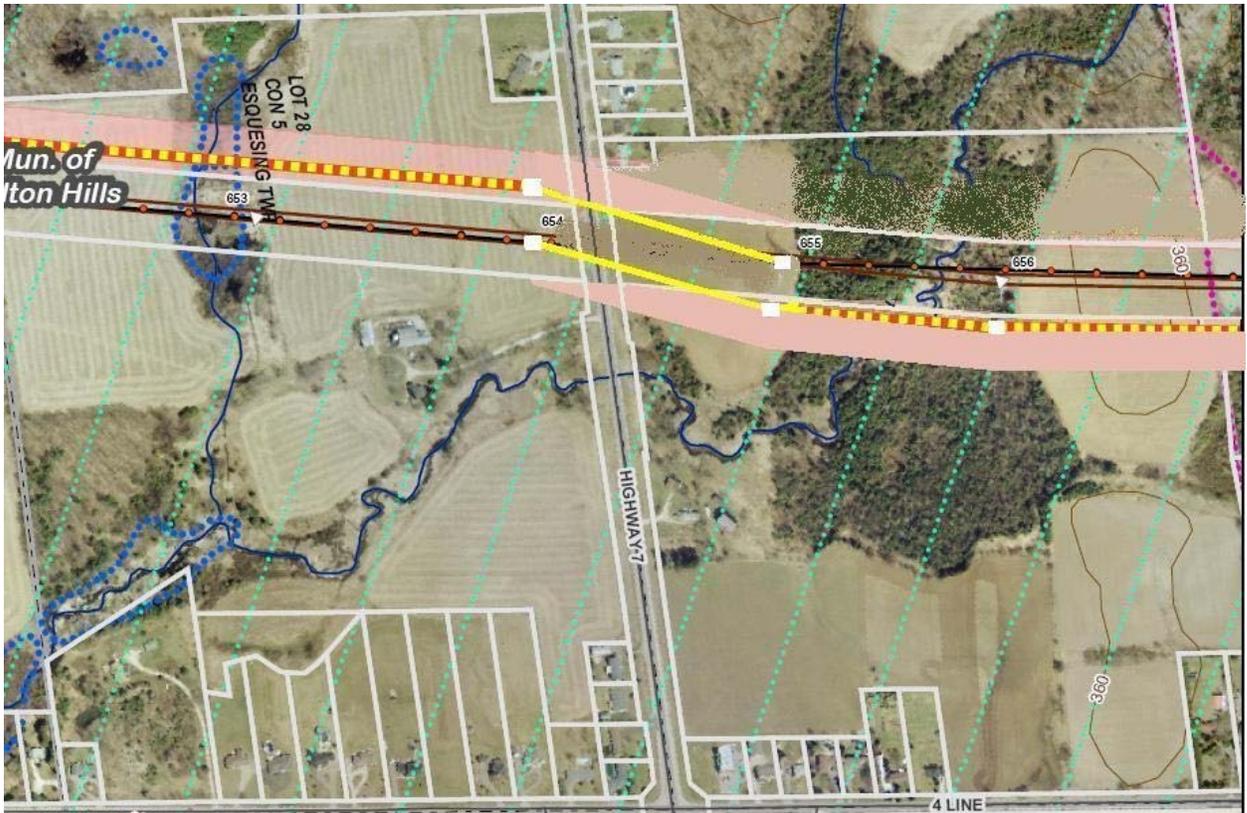
Response

Rather than a crossing of the existing B x M 500kV line, a circuit switch-over is proposed as part of the route refinement options under study in Halton Hills. This has technical and system advantages to a crossing of 500kV circuits. This switch-over (see attached sketch) would involve:

- 1 1. Installing 2 new dead end structures (turning towers) on the existing B x M line at
- 2 the location of the switch-over
- 3 2. Connecting the new line (on the east) to the existing circuit
- 4 3. Connecting the existing line to the new towers which would be built on the west
- 5 side of the right of way from this point connecting to Milton SS.
- 6

7 A double circuit outage on the existing 500 kV circuits would be required for the switch-
8 over.

- 9
- 10 (a) see attached sketch for preliminary design
- 11 (b) The new structures required on the existing line are similar to other dead end
- 12 (turning) towers proposed for the new line required. The exact measurements
- 13 are subject to detailed design. The base of the structure would be
- 14 approximately 50' x 50'. The height of the structure would be approximately
- 15 170'
- 16 (c) Not applicable as lines are not crossed
- 17 (d) The switch-over will cost in the order of \$5M to \$7M. This does not include
- 18 real estate or outage costs
- 19
- 20



1 **Fallis INTERROGATORY #99 List 1**

2
3 **Interrogatory**

4
5 Issues:

- 6 1.2. 1.2 Does the project qualify as a non-discretionary project as per the OEB's Filing
7 Requirements for Transmission and Distribution Applications and if so what
8 categories of need as referred to in Section 5.2.2 of these Filing Requirements are
9 relevant?
10
11 1.3. Have all appropriate project risk factors pertaining to the need and justification
12 (including but not limited to forecasting, technical and financial risks) been taken
13 into consideration in planning this project?
14
15 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably
16 foreseeable future needs of significantly increased or significantly reduced
17 generation in the Bruce area?

18
19 Ref B/Tab 6/Schedule 5/Appendix 2

20
21 B/Tab 6/Schedule 5/Appendix 4

22
23 B. General Interrogatories:

24
25 Would the installation of the crossing lines overtop of the existing 500 KV Line require
26 the complete stoppage of transmission of all power through the existing line during the
27 construction of such crossing lines?
28

29
30 **Response**

31
32 Yes, if a crossing were installed. Please see the response to Fallis Interrogatory 98.

Fallis INTERROGATORY #100 List 1

Interrogatory

Issues:

- 1.2. Does the project qualify as a non-discretionary project as per the OEB's Filing Requirements for Transmission and Distribution Applications and if so what categories of need as referred to in Section 5.2.2 of these Filing Requirements are relevant?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref B/Tab 6/Schedule 5/Appendix 2

B/Tab 6/Schedule 5/Appendix 4

B. General Interrogatories:

Is there sufficient transmission reserve capacity amongst the remaining existing 4 transmission lines to allow for the shut down of the existing 500 KV Line while such 500 KV cross-over line construction would take place?

Response

Outages for critical transmission line work, such as that required to reconfigure the lines to enable line crossings or line switch-overs are carefully planned and coordinated with outages planned by the generator, Bruce Power in this case, and the IESO to ensure that a reliable power system can be maintained during the outage. Hence, no reserve transmission capacity is required as advantage is taken of opportunities when the lines are lightly loaded. Operators of nuclear power plants are required to periodically test the integrity of all of the emergency safety systems. One of these requires the shutdown of the entire plant for a duration of about a month. These plant shutdowns enable outages for critical transmission line work to be executed. Bruce Power has scheduled plant shutdowns in 2009 and 2010 for the Bruce A and Bruce B plants respectively. It is during these plant outages that Hydro One is planning to construct the line crossings or switch-overs.

Fallis INTERROGATORY #101 List 1

Interrogatory

Issues:

- 1.2. Does the project qualify as a non-discretionary project as per the OEB's Filing Requirements for Transmission and Distribution Applications and if so what categories of need as referred to in Section 5.2.2 of these Filing Requirements are relevant?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref B/Tab 6/Schedule 5/Appendix 2

B/Tab 6/Schedule 5/Appendix 4

B. General Interrogatories:

The full output of the Bruce 'A' and the Bruce 'B' Generating Stations and the Douglas Point Nuclear Generating Station were in the order of 6760 MW (4 x 890 + 4 x 750 MW as identified by the Board Staff of the OEB. Plus an additional 200 MW from Douglas Point GS.

- a) How was Ontario Hydro able to transmit 6,750MW of electrical from all 9 generating units within the Bruce complex and the 5 transmission lines, (three x 230KV and two x 500KV), evacuated that generation until the laying up of Bruce 'A' Unit 2 in October 1995 and Unit 1 of Bruce 'A' in December of 1997) ?
- b) Has the OEB Board Staff correctly determined that the full output from Bruce 'A' GS and Bruce 'B'GS were in the order of 6,560 MW?
- c) Did Douglas Point generate or was it capable of generating an additional 200 MW during the time of full output from Bruce 'A' GS and Bruce 'B'GS ?
- d) As the very same structures of the 5 transmission lines that served Ontario Hydro to transmit all of the power produced from the 9 nuclear reactors at the three GS, and formed the electrical highway, what degradation has been suffered to those 5 lines to degrade their transmission capability to 5,060 MW, a reduction of 1,700 MW?
- e) The Minister of Energy has advised the legislature that a 230KV line can transmit 1,500MW of power, and HON1 has stated that a 500KV line can transmit 3,000 MW of power. Are each of these statements still correct?

- 1 f) If so, would it be correct that 3 separate 230KV lines running from the Bruce could each
2 transmit 1,500 MW of power for an aggregate transmission capacity of 4,500 MW, and if
3 not why not?
4
- 5 g) If so, would it be correct that 3 separate 500KV lines running from the Bruce could each
6 transmit 3,000 MW of power for an aggregate transmission capacity of 6,000 MW, and if
7 not why not?
8
- 9 h) Would the combined original design transmission capacity for the 5 transmission lines
10 running from the Bruce not, in the aggregate, total a 10,500MW transmission capacity
11
12

13 Response
14

- 15 a) All four Bruce A units, all four Bruce B units and the Douglas Point Reactor
16 were never in-service at the same time to the best of our knowledge. The Bruce
17 B units came in-service after the Douglas Point Reactor was taken out of service
18 permanently. An explanation regarding the transmission system's previous
19 capability is available as part of the technical conference presentation (see slide
20 25). Also see the part of the technical conference transcript that refers to this
21 part of the presentation (pgs. 22-23). A detailed explanation about this is also
22 available as part of Hydro One's response to Board Staff Interrogatory 1.3.
23
- 24 b) As explained at the technical conference, the total net generation capacity of the
25 Bruce NGS Units (A 1,2,3, & 4 and B 5,6,7,&8) will be approximately 6400
26 MW. Please refer to slides 14-16 of the technical conference presentation and
27 page 15 of the technical conference transcript.
28
- 29 c) As explained in part A of this question, there was no time during which all the
30 Bruce A units, all the Bruce B units and the Douglas Point Reactor were in-
31 service at the same time.
32
- 33 d) Again, there were never 9 nuclear reactors operating at the Bruce Site as
34 explained in parts A and C of this question. An explanation of the different
35 capability of the transmission system today and the system in 1985 was provided
36 in the technical conference. This discussion is referenced directly in part A of
37 this question.
38
- 39 e to h) Hydro One is not aware of the specific statement and therefore, it cannot
40 comment directly. However, simply adding up the thermal capacity of
41 individual parallel circuits does not yield the reliable total transfer capability of
42 the system, for a variety of technical reasons, most importantly that power does
43 not flow equally on all the circuits of interest, some margin must be included for
44 contingencies, and that the system may be more constrained by voltage or

1 stability performance (this is the case at times with the south-western Ontario
2 transmission).

3 The 230 kV circuits out of the Bruce have typical continuous summer thermal
4 ratings of about 500-600 MW. The 500 kV circuits have about 3,000 MW.
5 When allowance is made for contingencies, operation is generally limited to
6 something less than this continuous rating, i.e. the 230 kV double-circuit line to
7 Orangeville can typically be expected to transfer about 750 MW. The same can
8 be said about the 500 kV circuits, except that voltage and stability performance
9 often can be more limiting. For the Bruce to Milton circuits the typical transfer
10 level is expected to be about 2000 MW each.

11 Lastly, and vary importantly, because the power does not distribute equally
12 among all the circuits, but tends to be proportionally higher on the shorter
13 circuits, and those connected towards Toronto, the proportion of transfer on each
14 of the circuits out of the Bruce area varies considerably. Refer to the IESO SIA
15 diagrams for a detailed listing of these flow patterns, and the opening slides of
16 the technical conference. All of these factors yield a total transfer capability
17 considerably less than if a simple addition of the thermal ratings is used.

18

Fallis INTERROGATORY #102 List 1

Interrogatory

Issues:

- 1.2. Does the project qualify as a non-discretionary project as per the OEB's Filing Requirements for Transmission and Distribution Applications and if so what categories of need as referred to in Section 5.2.2 of these Filing Requirements are relevant?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref B/Tab 6/Schedule 5/Appendix 2

B/Tab 6/Schedule 5/Appendix 4

B. General Interrogatories:

When electrical power is transmitted to the Ontario Power Grid, from the Bruce, be it at Longwood, Detweiler, Milton, Orangeville, Hanover or Owen Sound, through the existing 5 Transmission Lines,

- a) is there sufficient electrical grid capacity in Ontario to ensure that once such electrical power is received in the grid, that everyone in the grid has access thereto including the GTA?, and
- b) in the absence of directness of power transmission towards a particular destination, say the GTA, is there any significant diminishment of electrical power received in such direct destination, if the destination is otherwise well connected to the Ontario Electrical Grid.

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Response

- a) Yes, everyone connected to the grid would have access to the electrical energy from the existing and planned generators in the Bruce area once the proposed Bruce x Milton 500 kV line is built.
- b) Hydro One assumes “diminishment of electrical power” in the interrogatory is referring to transmission losses. Losses on the transmission system depend on many factors including the amount of power and distance it is being transferred, and the voltage of the transmission system. The proposed Bruce x Milton 500 kV line will reduce the transmission losses by about 60 MW as compared to the system with the near-term upgrade only, while transferring 7 Bruce units and 700 MW of wind generation from the Bruce area.

1 **Fallis INTERROGATORY #103 List 1**

2
3 **Interrogatory**

4
5 Issues:

- 6 1.2. 1.2 Does the project qualify as a non-discretionary project as per the OEB's Filing
7 Requirements for Transmission and Distribution Applications and if so what
8 categories of need as referred to in Section 5.2.2 of these Filing Requirements are
9 relevant?
10
11 1.3. Have all appropriate project risk factors pertaining to the need and justification
12 (including but not limited to forecasting, technical and financial risks) been taken
13 into consideration in planning this project?
14
15 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably
16 foreseeable future needs of significantly increased or significantly reduced
17 generation in the Bruce area?
18

19 Ref B/Tab 6/Schedule 5/Appendix 2

20
21 B/Tab 6/Schedule 5/Appendix 4

22
23 B. General Interrogatories:

24
25 Are there 'in ground' wiring conduits that are proposed to run from tower to tower in the
26 proposed new 500 KV Transmission Line to provide grounding, and if so please describe
27 the size of the conduit, the technical purpose of its installation, the depth at which it is
28 placed and the number of conduits placed in the ground.
29

30
31 **Response**

32
33 The need for "counterpoise" will not be known until after foundations are installed and
34 ground resistivity measurements are taken. If counterpoise wires are required Hydro One
35 expects this to occur on less than 1% of all new structures.

Fallis INTERROGATORY #104 List 1

Interrogatory

Issues:

- 1.2. Does the project qualify as a non-discretionary project as per the OEB's Filing Requirements for Transmission and Distribution Applications and if so what categories of need as referred to in Section 5.2.2 of these Filing Requirements are relevant?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref B/Tab 6/Schedule 5/Appendix 2

B/Tab 6/Schedule 5/Appendix 4

B. General Interrogatories:

In the late 1970's when the first 500 KV line was erected that construction location and line siting was placed immediately beside the first 230 KV line that deviated off the "Transmission corridor" and followed the 'Hanover Dip' of the first 230 KV Line in the 1960's which took power to the Hanover TS. What electrical or other technical reason was there in the late 1970's to construct the first 500 KV Transmission Line following that deviation into the urban future settlement area of the Town of Hanover.

Response

Hydro One is not aware of an electrical or technical reason for constructing the existing 500kV line following the path into the urban settlement area of the Town of Hanover. This path follows the existing 230kV transmission line and corridor (constructed prior to the existing 500kV line), which is consistent with a long standing direction issued to Ontario Hydro from Provincial authorities in the past to make best use of existing corridors before seeking approval for new corridors. Please refer to Hydro One's response to OEB Staff Interrogatory 2.9(v).

1 **Fallis INTERROGATORY #105 List 1**

2
3 **Interrogatory**

4
5 Issues:

- 6 1.2. Does the project qualify as a non-discretionary project as per the OEB's Filing
7 Requirements for Transmission and Distribution Applications and if so what
8 categories of need as referred to in Section 5.2.2 of these Filing Requirements are
9 relevant?
- 10
- 11 1.3. Have all appropriate project risk factors pertaining to the need and justification
12 (including but not limited to forecasting, technical and financial risks) been taken
13 into consideration in planning this project?
- 14
- 15 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably
16 foreseeable future needs of significantly increased or significantly reduced
17 generation in the Bruce area?

18
19 Ref B/Tab 6/Schedule 5/Appendix 2

20
21 B/Tab 6/Schedule 5/Appendix 4

22
23 B. General Interrogatories:

24
25 What electrical or other technical reason exists presently to construct the proposed 500
26 KV Transmission Line following that previous two deviation transmission lines into the
27 urban future settlement area of the Town of Hanover.

28
29
30 **Response**

31
32 There is no electrical or technical reason to construct the proposed 500kV transmission
33 line along the existing transmission corridor into the urban settlement area of the Town of
34 Hanover. Please refer to Hydro One's response to Fallis Interrogatory 104.

Fallis INTERROGATORY #106 List 1

Interrogatory

Issues:

- 1.2. 1.2 Does the project qualify as a non-discretionary project as per the OEB's Filing Requirements for Transmission and Distribution Applications and if so what categories of need as referred to in Section 5.2.2 of these Filing Requirements are relevant?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref B/Tab 6/Schedule 5/Appendix 2

B/Tab 6/Schedule 5/Appendix 4

B. General Interrogatories:

Other than a net difference in land costs saved by HON1 and the consumer ratepayers of Ontario by staying in a rural designation within a rural area, rather than crossing urban growth lands of Hanover, how much distance would be saved and how much monies would also be saved by HON1 and by the consumer ratepayers of Ontario from a construction point of view if a straight line transmission construction were to take place to the north of and between existing 500 KV Tower NO. 187 and 500 KV Tower No. 229?

Response

The estimated cost savings of constructing, in a straight line path between structures 187 and 229 is estimated to be \$3 million, as compared to the proposed route that parallels the existing line. This estimate does not take into account additional real estate costs or costs associated with the mitigation of environmental impacts associated with new green-field right of way requirements.

This estimate also assumes equivalent soil and access conditions would exist.

Fallis INTERROGATORY #107 List 1

Interrogatory

Issues:

- 1.2. Does the project qualify as a non-discretionary project as per the OEB's Filing Requirements for Transmission and Distribution Applications and if so what categories of need as referred to in Section 5.2.2 of these Filing Requirements are relevant?
- 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?
- 1.4. Is the project suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area?

Ref B/Tab 6/Schedule 5/Appendix 9

Preamble:

In this Exhibit being a letter from the Minister of Energy dated November 16, 2005 the Minister identified 4 renewable wind farm power generation projects in the Bruce/Huron area, namely:

	Supplier	Project	Location
1	Enbridge Ontario Wind Power LLP Or Leader Wind Corp	Leader Wind Power Project A -100.65 MW	Bruce County etc.
2	Enbridge Ontario Wind Power LLP Or Leader Wind Corp	Leader Wind Power Project B -99MW	Bruce County etc.
3	EPCOR Power Development (Ontario) LLP	Kingsbridge II Wind Power	Huron County etc.
4	Suncor Energy Products Inc, & EHN Windpower Canada Inc.	Ripley Wind Power	Huron County etc.

1 C. Transmission of Power from Renewable Wind Farm Generation:

2
3 As to wind generation please provide the following answers to the following technical
4 interrogatories:

5
6 a) Are there presently any wind farms in Bruce and Huron Counties that are
7 generating electrical power that is being presently received into the Ontario Power
8 Grid by means other than by connection to the Bruce Power Facility?

9
10 b) If Bruce Power owns all of the facilities within its compound, is there a technical
11 and/or contractual requirement for Bruce Power to provide 'receiving' electrical
12 facilitation equipment and transformer capacity for any electrical power generated
13 by third parties outside of its compound, so that such 'received' power would be
14 delivered down and along any of the 5 existing, (and potentially 6), transmission
15 lines.

16
17 c) The Ripley Wind Power Project, as constructed, lies in excess of 50 KM from the
18 Bruce Nuclear generation Facility owned privately by Bruce Power.

19
20 (a) What and where is the existing and/or proposed contemplated technical
21 link: between the Ripley Wind Power Project generation facilities and the
22 newly proposed 500 KV Transmission Line, in respect of the OPA states
23 that which wind farm power generation is proposed to be transmitted over
24 such transmission line(s) from the Bruce.

25
26 (b) Is it contemplated by HON1 that such generated power will be first
27 transmitted that long distance to the Bruce to be transmitted from Bruce
28 Power properties and facilities from such wind farm endeavors.

29
30 d) The Melancthon II Wind Project are apparently in production and harvesting
31 electrical energy from the wind which is apparently transmitted towards the
32 Orangeville TS where the 230 KV line from the Bruce also joins into the Ontario
33 Grid. Will HON1 provide a copy of the electrical records showing how much
34 electrical power is received monthly in MW/h into the grid from that wind farm
35 area, and the cost to HON1 of power generation production received by HON1
36 there from, and also advise as what is the measured consumption, expressed in
37 MW/h for the same wind farms for which consumption charges are rendered by
38 HON1 for the same reporting periods.

39
40 e) What is the net generation capacity of the Melancthon II Wind Project after
41 deducting the power consumed by the same Wind Farm over the same reporting
42 period (s)

- 1 f) How many wind turbines presently are constructed and are operational in the
2 Melancthon II Wind Project complex.
3
- 4 g) In order to generate 1,740 MW/h of electrical energy by wind turbines how many
5 wind turbines would it take to generate such sustained electrical energy.
6
- 7 h) How many wind turbines are now constructed in Bruce and Huron Counties
8 proximate to the Bruce Power Facilities.
9
- 10 i) How many additional wind turbines are approved for construction in Bruce and
11 Huron Counties proximate to the Bruce Power Facilities.
12
- 13 j) What are the locations for these existing and approved wind turbines for
14 construction in Bruce and Huron Counties proximate to the Bruce Power
15 Facilities, and that will be using the Bruce Power Facilities for the transmission of
16 electrical power generated by wind turbines, and how many kilometers distant
17 from the Bruce Power facilities are the present and proposed wind turbine tower
18 farms to be constructed.
19
- 20 k) Would HON1 please identify all potential locations for the wind farms that will
21 generate the 1,740MW/h that the OPA has indicated will be in service by 2016
22 and that the Bruce transmission lines (and the new line, if approved and
23 constructed), will serve.
24
- 25 l) Would you please provide a copy of the full names of all present and proposed
26 companies or LLPs which have been approved for the construction of wind
27 generation facilities within Huron and Bruce counties, with full addresses, for
28 courier delivery, phone, fax and E-Mail addresses, and contact person and title?
29
30

31 **Response**
32

- 33 (a) Yes, currently there are the Kingsbridge I, Amaranth I and Ripley wind farms
34 generating power in the Bruce Area.
35
- 36 (b) Bruce Power does not own all of the facilities within its compound. Hydro One owns
37 all of the electrical transmission equipment with the exception of those parts used to
38 interconnect the Bruce Power owned generators, such as the main unit step-up
39 transformer or circuit breaker used to synchronize a unit.
40
- 41 (c)
42 a) The Ripley Wind Power Project is connected to the Bruce to Seaforth 230 kV
43 line. There is no direct connection from this wind generator to the proposed Bruce
44 to Milton 500 kV line. From the 230 kV point of connection, the power is

1 transmitted over the 230 kV and 500 kV transmission lines in the Bruce
2 transmission system to the rest of the Ontario power grid.

3 b) The power is not first transmitted to the Bruce Power facilities or to the Bruce
4 transformer stations.

5
6 (d) The Melancthon II (Amaranth II) project is not commercially operational.
7

8 Please note that Hydro One is a transmission service provider and as such it does not have a
9 power purchase contract with the subject wind farm or any other generator. For that reason,
10 the question concerning “the cost to HONI of power generation production received there
11 from” is not applicable. The subject wind farm is also not a load customer of Hydro One
12 and as such Hydro One does not levy consumption charges. Please see the response to part
13 (e) of this response for information regarding the measurement of consumption at the subject
14 wind farm.
15

16 (e) As noted earlier in Hydro One’s response to Interrogatory 107 (D), Melancthon II
17 (Amaranth II) is not commercially operational.
18

19 Metering is done at each delivery point and is therefore net of any power consumed
20 for station service. Accordingly, the IESO does not have data on station service
21 consumption for Amaranth I.
22

23 (f) There are no wind turbines at the Amaranth II Wind Project complex that are
24 currently constructed and operational. The project is not planned to be in-service
25 until Q4 of 2008 as explained at the OPA site.
26

27 (g) The answer is dependant on the assumptions made regarding capacity factor and
28 turbine size which have not been specified.
29

30 (h) There are 45 wind turbines at the Amaranth I site, 22 wind turbines at the Kingsbridge
31 I site, and 38 turbines at the Ripley Wind Farm.
32

33 (i) There are a total of approximately 685 MW of wind generation committed for the
34 Bruce area. Amaranth I, Kingsbridge I, and the Ripley Wind Farm account for 67.5
35 MW, 39.6 MW, and 76 MW, respectively. They account for 105 wind turbines. The
36 other committed projects total 278 turbines.
37

38 (j) The approximate locations of the committed wind farms can be found at
39 <http://www.powerauthority.on.ca/Page.asp?PageID=924&SiteNodeID=234>.
40

41 (k) The locations of the wind generation are shown in the technical conference
42 presentation slide 17. More detailed information about the committed wind farm
43 locations can be found at the website given in the response to Question 101 Part J.
44 For more details on the exact locations of forecast SOP, see the queue lists and station
45 limitations on Hydro One’s website:

1 [http://www.hydroonenetworks.com/en/customers/generators/generation_connections/distribut](http://www.hydroonenetworks.com/en/customers/generators/generation_connections/distribution/queue_process/default.asp)
2 [ion/queue_process/default.asp](http://www.hydroonenetworks.com/en/customers/generators/generation_connections/distribution/queue_process/default.asp).

3
4 (1) Please see the OPA website, as all of this information is publicly available. For the
5 large wind generation projects please use the following link:
6 <http://www.powerauthority.on.ca/Page.asp?PageID=924&SiteNodeID=234> and for
7 the SOP projects in the Bruce Area use the following table:

8

Applicant Name	Main Contact Name	Phone	Fax	EEmail
Township of Bonnechere Valley	Franklyn Scheer	613-628-3526	613-628-1336	franklin@sympatico.ca
Cruickshank Wind Farm Ltd.	Doug Duimering	519-386-1657	519-395-2605	duimering@bmts.com
Chinodin Wind Power	Malcolm Hamilton	647-297-4898	416-924-2452	hamilton47@rogers.com
Chinodin Wind Power	Malcolm Hamilton	647-297-4898	416-924-2452	hamilton47@rogers.com
EPCOR Renewable Power (Ontario) L. P.	Leigh-Anne Palter	416-773-7440	416-773-7470	lpalter@epcor.ca