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October 1st, 2007

Via E-Mail: jsmellie@osler.com

Osler Hoskin Harcourt LLP
Suite 2500, TransCanada Tower
450 First Street S.W.
Calgary, Alberta
T2P 5H1

Attention: Mr. James H. Smellie

Solicitors for Hydro One Networks Inc.

Via E-Mail: glen.e.macdonald@HydroOne.com

Hydro One Networks Inc.
8th Floor, South Tower
433 Bay Street
TORONTO, Ontario.
M5G 2P5

Attention: Mr. Glen MacDonald - Senior Advisor

Dear Sirs:

Re: OEB File EB -2007-0050

Please find enclosed, at this time, a series of '*Technical Questions*' submitted to HONI as of October 1, 2007 being the date established by the OEB for such submission in advance of the Technical Conference to be held on October 15th & 16th at Toronto before the OEB

We appreciate that HONI may prefer to respond in writing to certain of the questions while providing oral answers to other questions at the Technical Conference on October 15th and 16th in Toronto. Such advance answers may serve tyo shorten the mid-October proceedings. Any written

answers provided in advance would be welcomed, but we would ask that such written answers be provided by noon on October 11th, 2007.

A copy of these "Technical Questions" is being forwarded also the Secretary of the OEB .

Please acknowledge receipt by E-mail.

Yours truly,

FALLIS FALLIS & McMILLAN

Peter T. Fallis

PTF:
Encls.

Ontario Energy Board
P.O. Box 2319
2300 Younge Street
TORONTO, ON, M4P 1E4

Attention: Ms. Kirsten Walli -
Board Secretary

Via E-Mail: boardsec@oeb.gov.on.ca

\\Peter1\storage (d)\A.COMMERCIAL\07 COM\HYDRO ONE TRANSMISSION LINES 07\Letter to OEB & HONI (Questions to HONI) Oct.1, 2007.wpd

OEB File No. EB - 2007-0050

QUESTIONS
TO
HYDRO ONE NETWORKS INC. ('HONI')
PRIOR TO
TECHNICAL CONFERENCE

SUBMISSION DATE: **OCTOBER 1ST , 2007**

SUBMITTED BY: **FALLIS GROUP OF INTERVENER LANDOWNERS, ('Fallis Group')**

FALLIS, FALLIS & McMILLAN
Barristers & Solicitors
195 Lambton Street East
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Solicitors for the Fallis Group of Interveners:

The following are a series of *'technical questions'* submitted to HONI as of October 1, 2007 being a date established by the OEB for such submission in advance of the Technical Conference to be held on October 15th & 16th at Toronto before the OEB.

A. HISTORIC AND CURRENT TECHNICAL QUESTIONS:

A.1 DOUGLAS POINT NUCLEAR REACTOR

1. **(A)** What was the original commissioning 'in-service' date, (approx. 1968,) and **(B)** what was the de-commissioning 'out-of-service' date, (approx. 1984), of the original Douglas Point Nuclear Power Plant located at Douglas Point in Bruce County, ("Douglas Point Reactor") ?

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

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

4. **(A)** Was/were the Transmission Line(s), through which was transmitted the power generated from the Douglas Point Reactor, constructed specifically to transmit the power generated from the Douglas Point Reactor to the Ontario Grid, and **(B)** if not, why not.

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

6. **(A)** From what municipal starting location and **(B)** what municipal ending location was/were constructed the Transmission Line(s) that transmitted the electrical power generated from the Douglas Point Reactor, what is/are the measured length of that/those Transmission Line(s) in separate and combined length, expressed in KM, and **(C)** when was such construction of that/those Lines completed ?

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

8. **(A)** Is/are the Transmission Line(s) that transmitted the electrical power generated from the Douglas Point Reactor still in service today, and if so, **(B)** is the maximum electrical transmission capacity of that those Transmission Line(s),ex-pressed in MW/h, still the same today as it/they was/were during the commissioned operation of and power generation from the Douglas Point Reactor, and **(C)** if not - why not ?

9. **(A)** Since the Douglas Point Reactor was de-commissioned has/have the dedicated Transmission Line(s) used originally to transmit electrical energy produced at the Douglas Point Reactor been used since that date of de-commissioning of the Douglas Point Reactor, been used for the transmission of electrical power otherwise and since 1984 generated from the Bruce area facilities, and **(B)** if not - why not ?

10. **(A)** If the dedicated Transmission Line(s) used originally to transmit electrical energy produced at the Douglas Point Reactor have not been used since de-commissioning in 1984 or have not been used to the same maximum intensities of electrical transmission as so utilized while the Douglas Point Reactor was commissioned and so used, why, and **(B)** are there transmission upgrades that could now be made to restore the transmission capacity of that/those Transmission Line(s) to maximum 1968 - 1984 transmission capacity levels ?

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

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

A.2 BRUCE "A" NUCLEAR FACILITY

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

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

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

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

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

18. **(A)** Were the original contemplated dates for de-commissioning of Units '1' and '2' of Bruce 'A' at substantial variance with the actual dates of de-commissioning of Units '1' and '2' of Bruce 'A' and **(B)** if so, - why ?

19. On what dates were each of Units '3' and '4' of Bruce "A' originally scheduled for de-commission to be taken out-of-service and cease generating electrical power at the Bruce ?

20. **(A)** *During what calendar periods of time* were each of Units '1', '2', '3' and '4' of Bruce 'A' each producing, at the same time, a maximum power generation capacity, in a combined format, a maximum power generation capacity, in a combined format, *and* **(B)** *what was* the maximum combined generation capacity from all of Units '1', '2', '3' and '4' of Bruce 'A', all generating maximum power at capacity together, at the same time, as expressed in MW/h ?

21. **(A)** ; *During what calendar periods of time* were **(1)** each of Units '1', '2', '3' and '4' of Bruce 'A' each producing, at the same time, a maximum power generation capacity, in a combined format, while at the same time **(2)** each of Units '1', '2', '3' and '4' of Bruce 'B' were also each producing a maximum power generation capacity, in a combined format, from each of the 4 Units at Bruce 'B', *and* **(B)** *what was* the maximum double combined generation capacity from all of Units '1', '2', '3' and '4' of Bruce 'A', and from Units '1', '2', '3' and '4' of Bruce 'A', both and all generating maximum power at capacity together, at the same time, as expressed in MW/h ?

22. **(A)** *During what calendar periods of time* were **(1)** each of Units '1', '2', '3' and '4' of Bruce 'A' each producing, at the same time, a maximum power generation capacity, in a combined format, while at the same time, **(2)** each of Units '1', '2', '3' and '4' of Bruce 'B' were also each producing a maximum power generation capacity, in a combined format, from each of the 4 Units at Bruce 'B', and **(3)** the Douglas Point Reactor was also, at the same time, producing a maximum power generation capacity therefrom, *and* ***(B)*** *what was* the maximum triple combined generation capacity from all of Units '1', '2', '3' and '4' of Bruce 'A', and from Units '1', '2', '3' and '4' of Bruce 'B', and the Douglas Point Reactor, all generating together, at the same time, as expressed in MW/h, and all three generating maximum power at capacity together, at the same time, as expressed in MW/h ?

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

Reactor ?

24. **(A)** *Has the transmission capacity* along all Transmission Lines originating at the Bruce, as constructed for transmitting all maximum generation capacity of all electrical power generated from the combination from each of Units '1', '2', '3' and '4' of Bruce 'A', and from Units '1', '2', '3' and '4' of Bruce 'B', and the Douglas Point Reactor for transmission to the Ontario Hydro Grid, ever been so deficient so as not to be able to transmit any such maximum generation of power so produced from Bruce 'A', Bruce 'B' and Douglas Point Reactor combined, *and* **(B)** *if so* during what calendar periods of time has such transmission capacity been so deficient *and* **(C),** *if so*, what line outages or transmission deficiencies caused such lack of transmission capacity ?

A.2 BRUCE "B" NUCLEAR FACILITY

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

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

26. **(A)** What is the actual maximum 'net generating capacity' of each of each of Units '1', '2', '3' and '4' of Bruce 'B' expressed in MW/h. (. (The Auditor General of Ontario determined in April, 2007 in his Report on the Refurbishment Agreement between Bruce Power and the OPA made October 17th, 2005, that each Unit of Bruce 'A' had an authorized net generating capacity of 785 MW/h) ? In the *IPSP Discussion Paper # 5 - Transmission* produced by the OPA , filed as Exhibit b, Tab 6, Schedule 5, Appendix 5, & on page 44 thereof the OPA states that each of Units1, 2, 3 & 4 of Bruce 'B' have a generation capacity of 890MW/h. **(B)** Which statement as to the production capacity of each of Units1, 2, 3 & 4 of Bruce 'B' is wrong and **(C)** has he OPA taken steps to correct the wrong information disseminated by the Auditor General of Ontario, or has the OPA stated the wrong production capacity of each of Units1, 2, 3 & 4 of Bruce 'B' and so advised the OEB and participants and interveners in this proceeding.

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

28. **(A)** *During what calendar periods of time* have each of Units '1', '2', '3' and '4' of Bruce 'A' each been producing, at the same time, a maximum power generation capacity, in a combined format, *and* **(B)** *what is* the maximum combined generation capacity from all of Units '1', '2', '3' and '4' of Bruce 'A' all generating maximum power at capacity, together, at the same time, as expressed in MW/h ?

A.3 TRANSMISSION LINES:

A.3.1 230 KV TRANSMISSION LINE BRUCE TO HANOVER/ORANGEVILLE:

29. **(A)** Was this 230 KV Transmission Line to Orangeville constructed under the authority of the Hydro Electric Power Commission of Ontario, and **(B)** what was/is the length of such Line, expressed in KM, and **(C)** what was the 'in-service date for the transmission of power along such 230 KV Line?

30. Was this 230 KV Transmission Line to Orangeville built originally to transmit power generated from the Douglas Pont Reactor ?

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

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

33. A former Minister of Energy of Ontario advised the Ontario Legislature that this existing 230 KV line was capable of transmitting all of the power generated from Units '1' and '2' of what is now and was then Bruce 'A'. The Auditor General of Ontario has advised that the net generation capacity for each of the 4 Units at Bruce 'A' was 769 MW/h. This represents 1,538 MW/h of power generation. Did the 230 KV Line have, from the outset the design transmission capacity to transmit thereon 1,538 MW/h as generated from the Bruce. **(A)** Was that statement technically correct when then made, and is that statement still technically correct today, and **(B)** if not - why not?

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

35. **(A)** What is the present maximum transmission capacity of this 230 KV Transmission line to Orangeville, expressed in MW/h, and **(B)** if it is lower than the original design transmission capacity, why, and, **(C)** if so, are there any technical reasons why this 230 KV Line cannot be refurbished to return it to its original design transmission capacity, and **(D)** if so, what are those technical reasons ?

36. **(A)** Is this 230 KV Transmission Line to Hanover TS /Orangeville TS dedicated to transmit from any particular Unit at the present time, from either Bruce 'A' or Bruce 'B', and **(B)** if so , from which dedicated Units at Bruce 'A' and/or Bruce "B"?

37. **(A)** What maximum amount of electrical power is typically delivered to the Hanover Transformer Substation ("TS") from the existing 230 KV Transmission Line, expressed in MW/h, and **(B)** what amount of electrical power is typically delivered beyond Hanover, from Hanover to Orangeville TS, expressed in MW/h ?

38. **(A)** Are any of the 230 KV Transmission Line towers which were constructed over 40 years ago in present need of replacement or refurbishment, and **(B)** if so , which towers are in such need, all of the towers being presently numbered by HONI ?

39. **(A)** Was a working life cycle ever originally established for the 230KV Transmission towers constructed for this 230 KV Line this Line to Orangeville , and **(B)**, if so what then was the forward calendar date for the end of such working life expectancy for the 230 KV Towers themselves ?

40. **(A)** What is the present working life cycle expectancy for the existing 230 KV Towers within this existing 230 KV Corridor to Orangeville, and **(B)** what is the forward calendar date now utilized as the date after which the existing 230 KV Line Towers will no longer be licensed for use by HONI ?

41. **(A)** What is the present working life cycle expectancy for each of the existing 230 KV power cable/conduit lines as strung between each of the 230 KV Towers within this existing 230 KV Corridor, and **(B)** what is the forward calendar date now utilized as the date after which each of the existing 230 KV power cable/conduit lines as strung between each of the 230 KV Towers as located suspended from such 230 KV Towers, within this existing 230 KV Corridor..

42. **(A)** Since the date of construction of each of the Towers within this 230KV transmission line in the early 1960's, over 40 years ago, have any of the towers and/or conduit power transmission cable/conduit lines ever had to have been replaced or repaired because of an event beyond working life deterioration, and **(B)** if so , please particularize each technical reason for each such repair or replacement, naming the present municipality, the Lot and Concession No. and the 230 KV tower number as presently so numbered by HONI on its current photo base mapping as provided, the date of such event involving loss repair and/or replacement ?

A.3.2 230 KV TRANSMISSION LINE BRUCE TO OWEN SOUND:

43. **(A)** What was this technical reason for the construction of this 230 KV Transmission Line to Owen Sound, and **(B)** what was/is the length of such Line, expressed in KM, and **(C)** what was the 'in-service date for the transmission of power along such 230 KV Line?

44. **(A)** When was the construction of this 230 KV Transmission Line to Owen Sound completed, and **(B)** *what is* the end location for this 230KV Transmission Line, and **(C)** to where is the electrical power further distributed, as transmitted by this 230KV Line to Owen Sound ?

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

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

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

48. **(A)** What is the present maximum transmission capacity of this 230 KV Transmission line, to Owen Sound expressed in MW/h, and **(B)** if it is lower than the original design transmission capacity, why, and, **(C)** if so, are there any technical reasons why this 230 KV Line to Owen Sound cannot be refurbished to return it to its original design transmission capacity, and **(D)** if so, what are those technical reasons ?

49. **(A)** Is this 230 KV Transmission Line to Owen Sound dedicated to transmit from any particular Unit at the present time, from either Bruce 'A' or Bruce 'B', and **(B)** if so , from which dedicated Units at Bruce 'A' and/or Bruce "B"?

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

51. **(A)** Was a working life cycle ever originally established for the 230KV Transmission towers constructed for this 230 KV Line to Owen Sound, and **(B)**, if so what then was the forward calendar date for the end of such working life expectancy for the 230 KV Towers to Owen Sound, ?

52. **(A)** What is the present working life cycle expectancy for the existing 230 KV Towers to Owen Sound within this existing 230 KV Corridor, and **(B)** what is the forward calendar date now utilized as the date after which the existing 230 KV Line Towers to Owen Sound will no longer be licensed for use by HONI ?

53. **(A)** What is the present working life cycle expectancy for each of the existing 230 KV power cable/conduit lines as strung between each of the 230 KV Towers to Owen Sound within this existing 230 KV Corridor, and **(B)** what is the forward calendar date now utilized as the date after which each of the existing 230 KV power cable/conduit lines as strung between each of the 230 KV Towers to Owen Sound as located suspended from such 230 KV Towers, within this existing 230 KV Corridor ?

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

A.3.3 230 KV TRANSMISSION LINE BRUCE TO DETWEILER:

55. **(A)** What was this technical reason for the construction of this 230 KV Transmission Line to Detweiler, and **(B)** what was/is the length of such Line, expressed in KM, and **(C)** what was the 'in-service date for the transmission of power along such 230 KV Line?

56. **(A)** When was this construction of this 230 KV Transmission Line to Detweiler completed, and **(B)** *what is* the end location for this 230KV Transmission Line, and **(C)** to where is the electrical power further distributed, as transmitted by this 230KV Line to Detweiler ?

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

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

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

60. **(A)** What is the present maximum transmission capacity of this 230 KV Transmission line to Detweiler, expressed in MW/h, and **(B)** if it is lower than the original design transmission capacity, why, and, **(C)** if so, are there any technical reasons why this 230 KV Line to Detweiler cannot be refurbished to return it to its original design transmission capacity, and **(D)** if so, what are those technical reasons ?

61. **(A)** Is this 230 KV Transmission Line to Detweiler dedicated to transmit from any particular Unit at the present time, from either Bruce 'A' or Bruce 'B', and **(B)** if so , from which dedicated Units at Bruce 'A' and/or Bruce "B"?

62. Are any of the 230 KV Transmission Line towers in this Line to Detweiler which were constructed over25 years ago in present need of replacement or refurbishment ?

63. **(A)** Was a working life cycle ever originally established for the 230KV Transmission towers constructed for this 230 KV Line to Detweiler, and **(B)**, if so what then was the forward calendar date for the end of such working life expectancy for the 230 KV Towers to Detweiler, ?

64. **(A)** What is the present working life cycle expectancy for the existing 230 KV Towers to Detweiler within this existing 230 KV Corridor, and **(B)** what is the forward calendar date now utilized as the date after which the existing 230 KV Line Towers to Detweiler will no longer be licensed for use by HONI ?

65. **(A)** What is the present working life cycle expectancy for each of the existing 230 KV power cable/conduit lines as strung between each of the 230 KV Towers to Detweiler within this existing 230 KV Corridor, and **(B)** what is the forward calendar date now utilized as the date after which each of the existing 230 KV power cable/conduit lines as strung between each of the 230 KV Towers to Detweiler as located suspended from such 230 KV Towers, within this existing 230 KV Corridor ?

66. **(A)** Since the date of construction of each of the Towers within this 230KV transmission Line in the '70s or '80s to Detweiler, over 25 years ago, have any of the towers and/or conduit power transmission cable/conduit lines ever had to have been replaced or repaired because of an event beyond working life deterioration, and **(B)** if so , please particularize each technical reason for each such repair or replacement, naming the present municipality, the Lot and Concession No. and the 230 KV tower number as presently so numbered by HONI on its current photo base mapping as provided, the date of such event involving loss repair and/or replacement ?

A.3.4 500 KV TRANSMISSION LINE BRUCE TO MILTON:

67. **(A)** what was/is the length of such Line, expressed in KM, and **(C)** what was the 'in-service date for the transmission of power along such 500 KV Transmission Line to Milton?

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

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

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

71. HONI has published and disseminated printed material in its submission to the Minister of

the Environment for Approval under the *Environmental Assessment Act* that states in writing that the proposed 500 KV line as proposed in this application for leave to construct will have a transmission capacity, expressed in MW/h, of 3,000 MW/h. **(A)** Does the existing 500 KV line constructed from the Bruce to Milton in the late '70s, some 30 years ago, have the present transmission capacity to transmit 3,000 MW/h, and **(B),** if not - why not, and **(C)** if not now but it previously had that transmission capacity is there any present technical reason why such original transmission capacity cannot be restored to the 500 KV Line by replacement and/or refurbishment.

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

74. **(A)** What is the present maximum transmission capacity of this 500KV Transmission Line, to Milton expressed in MW/h, and **(B)** if it is lower than the original design transmission capacity, why, and, **(C)** if so, are there any technical reasons why this 500 KV Line cannot be refurbished to return it to its original design transmission capacity, and **(D)** if so, what are those technical reasons ?

75. **(A)** Is this 500 KV Transmission Line to Milton dedicated to transmit from any particular Unit at the present time, from either Bruce 'A' or Bruce 'B', and **(B)** if so , from which dedicated Units at Bruce 'A' and/or Bruce "B"?

76. **(A)** Are any of the 500 KV Transmission Line towers which were constructed about 30 years ago in present need of replacement or refurbishment, and **(B)** if so , which towers are in such need, all of the towers being presently numbered by HONI?

77. **(A)** Was a working life cycle ever originally established for the 500 KV Transmission towers constructed for this 500 KV Line this Line to Milton, and **(B)**, if so what then was the forward calendar date for the end of such working life expectancy for the 500 KV Towers themselves ?

78. **(A)** What is the present working life cycle expectancy for the existing 500 KV Towers within this existing 500 KV Corridor to Milton, and **(B)** what is the forward calendar date now utilized as the date after which the existing 500 KV Line Towers will no longer be licensed for use by HONI ?

79. **(A)** What is the present working life cycle expectancy for each of the existing 500 KV power cable/conduit lines as strung between each of the 500 KV Towers within this existing 500 KV Corridor to Longwood, and **(B)** what is the forward calendar date now utilized as the date after which each of the existing 500KV power cable/conduit lines as strung between each of the 500KV Towers as located suspended from such500 KV Towers, within this existing 500 KV Corridor to Longwood ?

80. **(A)** Since the date of construction of each of the Towers within this 500KV transmission line in the late 1970'2, almost 30 years ago, have any of the towers and/or conduit power transmission cable/conduit lines ever had to have been replaced or repaired because of an event beyond working life deterioration, and **(B)** if so , please particularize each technical reason for each such repair or replacement, naming the present municipality, the Lot and Concession No. and the 500 KV tower number as presently so numbered by HONI on its current photo base mapping as provided, the date of such event involving loss repair and/or replacement

A.3.4 500 KV TRANSMISSION LINE BRUCE TO LONGWOOD:

81. **(A)** what was/is the length of such Line, expressed in KM, and **(C)** what was the 'in-service date for the transmission of power along such 500 KV Transmission Line to Longwood?

82. Was this 500 KV Transmission Line to Longwood built originally to transmit power generated from the the combined 4 Units 1, 2, 3, and 4, located at Bruce 'A ' and/or Bruce 'B'?

83. What was the maximum design transmission capacity of this 500 KV Line to Longwood, expressed in MW/h, when it was originally put into service ?

84. What has been the maximum sustained electrical power transmission along this existing 500 KV Line to Longwood, expressed in MW/h ?

85. HONI has published and disseminated printed material in its submission to the Minister of the Environment for Approval under the *Environmental Assessment Act* that states in writing that the proposed 500 KV line as proposed in this application for leave to construct will have a transmission capacity, expressed in MW/h, of 3,000 MW/h. **(A)** Does the existing 500 KV line constructed from the Bruce to Longwood in the late '70s, almost 30 years ago, have he present transmission capacity to transmit 3,000 MW/h, and **(B),** if not - why not, and **(C)** if not now but it previously had that transmission capacity is there any present technical reason why such original transmission capacity cannot be restored to the 500 KV Line by replacement and/or refurbishment.

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

87. **(A)** What is the present maximum transmission capacity of this 500KV Transmission Line, to Longwood expressed in MW/h, and **(B)** if it is lower than the original design transmission

capacity, why, and, **(C)** if so, are there any technical reasons why this 500 KV Line cannot be refurbished to return it to its original design transmission capacity, and **(D)** if so, what are those technical reasons ?

88. **(A)** Is this 500 KV Transmission Line to Longwood dedicated to transmit from any particular Unit at the present time, from either Bruce 'A' or Bruce 'B', and **(B)** if so , from which dedicated Units at Bruce 'A' and/or Bruce "B"?

89. **(A)** Are any of the 500 KV Transmission Line towers which were constructed within the 500KV Line to Longwood over 25 years ago in present need of replacement or refurbishment, and **(B)** if so , which towers are in such need, all of the towers being presently numbered by HONI?

90. **(A)** Was a working life cycle ever originally established for the 500 KV Transmission towers constructed for this 500 KV Line this Line to Longwood, and **(B)**, if so what then was the forward calendar date for the end of such working life expectancy for the 500 KV Towers themselves ?

91. **(A)** What is the present working life cycle expectancy for the existing 500 KV Towers within this existing 500 KV Corridor to Longwood, and **(B)** what is the forward calendar date now utilized as the date after which the existing 500 KV Line Towers will no longer be licensed for use by HONI ?

92. **(A)** What is the present working life cycle expectancy for each of the existing 500 KV power cable/conduit lines as strung between each of the 500 KV Towers within this existing 500 KV Corridor to Longwood, and **(B)** what is the forward calendar date now utilized as the date after which each of the existing 500KV power cable/conduit lines as strung between each of the 500KV Towers as located suspended from such500 KV Towers, within this existing 500 KV Corridor to Longwood ?

93. **(A)** Since the date of construction of each of the Towers within this 500KV Transmission Line to Longwood over 25 years ago, have any of the towers and/or conduit power transmission cable/conduit lines ever had to have been replaced or repaired because of an event beyond working life deterioration, and **(B)** if so , please particularize each technical reason for each such repair or replacement, naming the present municipality, the Lot and Concession No. and the 500 KV tower number as presently numbered by HONI on its current photo base mapping as provided, the date of such event involving loss repair and/or replacement

B. GENERAL TECHNICAL QUESTIONS

94. 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 1) ans 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 5,000 MW level to about 8,300 MW. 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"* .

95. 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 29rd, 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, today, 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. *Would the following statement, if it had been then made by Jan Carr, as CEO of the OPA on December 22, 2006, have been a technically correct statement of fact upon which the OEB, HONI and the power consumer ratepayers of Ontario could absolutely and unequivocally rely with absolute certainty as to its truthfulness and correctness, and if not - why not ?*

> ***"The existing transmission system that transmits power from the Bruce area . . . presently only has a maximum transmission capacity for the existing generation there now, . . . a combined output of about 5,060MW."***

G. *Would the following statement, if it had been then made by Jan Carr, as CEO of the OPA on December 22, 2006, have been a technically correct statement of fact upon which the OEB, HONI and the power consumer ratepayers of Ontario could absolutely and unequivocally rely with absolute certainty as to its truthfulness and correctness, and if not - why not ?*

> ***"Thus, the long term solution must be able to increase the maximum transmission capacity of the Bruce system from today's 5,000 MW level to about 8,300 MW. 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"***

96. 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.

97. 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.

98. 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 500 KV Transmission Line being crossed, and **(D)** what is the estimated cost of construction of each such type crossing-turning tower.

99. Would the installation of the crossing lines overtop of the existing 500 KV Line require the complete stoppage of transmission of all power through the existing line during the construction of such crossing lines ?

100. 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 ?

101. The Application contemplates that there will be a maximum of 8,300 MW/h of needed transmission capacity required to be available by 2016 to transmit all of the power generated from the Bruce area, including 6,560 MW/h from Nuclear generation and a further1,740 MW/h from wind generation.

As to wind generation please provide the following technical answers to the following technical questions:

A. Are there presently any wind farms in Bruce and Huron Counties that are generating electrical power that is being presently received into the Ontario Power Grid by means other than by connection to the Bruce Power Facility ?

B. If Bruce Power owns all of the facilities within its compound, is there a technical and/or contractual requirement for Bruce Power to provide 'receiving' electrical facilitation equipment and transformer capacity for any electrical power generated by third parties outside of its compound, so that such 'received' power would be transported down any of the 5 existing and potentially 6 transmission lines.

C. The Goderich Wind Farm, as constructed, lies in excess of 15 miles or more from the Bruce Nuclear generation Facility owned privately by Bruce Power. **(A)** What is the existing and/or proposed contemplated technical link between the Goderich Wind Farm generation facilities and the newly proposed 500 KV Transmission Line which wind farm proposes to capture, harness and transmit its power in the Ontario Grid . **(B)** Is it contemplated by HONI that such generated power will be first transmitted that long distance to the Bruce to be transmitted from Bruce Power properties and facilities from such wind farm endeavours.

D. The Melancthon Wind Farms are apparently in production and harvesting electrical energy from the wind which is transmitted to the Orangeville TS where the 230 KV line from the Bruce also joins into the Ontario Grid. Will HONI provide a copy of the electrical records showing how much electrical power is received monthly in MW/h into the grid from that wind farm area, and the cost to HONI of power generation production received by HONI therefrom, and also advise as what is the measured consumption, expressed in MW/h for the same wind farms for which consumption charges are rendered by HONI for the same reporting periods.

E. What is the net generation capacity of the Melancthon Wind Farm after deducting the power consumed by the same Wind Farm over the same reporting period (s)

F. How many wind turbines presently are constructed and are operational in the Melancthon wind farm complex.

G In order to generate 1,740 MW/h of electrical energy by wind turbines how many wind turbines would it take to generate such sustained electrical energy.

H. How many wind turbines are now constructed in Bruce and Huron Counties proximate to the Bruce Power Facilities.

I. How many additional wind turbines are approved for construction in Bruce and Huron Counties proximate to the Bruce Power Facilities.

J. What are the locations for these existing and approved wind turbines for construction in Bruce and Huron Counties proximate to the Bruce Power Facilities, and that will be using the Bruce Power Facilities for the transmission of electrical power generated by wind turbines, and how many kilometers distant from the Bruce Power facilities are the present and proposed wind turbine tower farms to be constructed.

K Would HONI please identify all potential locations for the wind farms that will generate the 1,740 MW/h that the OPA has indicated will be in service by 2016 and that the Bruce transmission lines (and the new line, if approved and constructed), will serve.

102. 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.

103. Are there 'in ground' wiring conduits that are proposed to run from tower to tower to provide grounding, and if so please describe the size of the conduit, the technical purpose of its installation, the depth at which it is placed and the number of conduits placed in the ground.

104. 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.

105. What electrical or other technical reason exists presently to construct the prosed 500 KV Transmission Line following that previous two deviation transmission lines into the urban future settlement area of the Town of Hanover.

106. Other than a net difference in land costs saved by HONI 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 HONI 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.

ALL OF WHICH TECHNICAL QUESTIONS ARE HEREBY RESPECTFULLY SUBMITTED WITH A REQUEST THAT A FULL AN COMPLETE WRITTEN RESPONSE BE PROVIDED BY HYDRO ONE NETWORKS INC TO THE FALLIS GROUP BY NOON, ON THURSDAY OCTOBER 11TH 2007

Dated: at Durham, Ontario this 1st day of October

FALLIS, FALLIS & McMILLAN
Barristers & Solicitors
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Peter T. Fallis, LSUC # 12371W
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Solicitors for the Fallis Group of Interveners.

To:

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Attention: Mr. James H. Smellie

Solicitors for Hydro One Networks Inc.

Fax: 1-403-260-7013
E-Mail: jsmellie@osler.com

And To:

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Attention: Ms. Kirsten Walli - Board Secretary

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