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March 24, 2008

BY COURIER (2 COPIES) AND EMAIL

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
P.O. Box 2319
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Toronto, Ontario M4P 1E4
Fax: (416) 440-7656
Email: boardsec@oeb.gov.on.ca

Dear Ms. Walli:

Re: Pollution Probe – Written Interrogatories – Part 1
EB-2007-0905 – Ontario Power Generation – 2008-09 Payments

Pursuant to Procedural Order No. 2, please find enclosed Pollution Probe's first set of interrogatories to Ontario Power Generation for this matter.

Yours truly,

B. Alexander

Basil Alexander

BA/ba

Encl.

cc: Applicant and Intervenors per Procedural Order No. 1

EB-2007-0905

Pollution Probe Interrogatories for OPG – Part 1

March 24, 2008

1. Issue 2.1, Exhibit C2, Tab 1, Schedule 1

If the Board does not approve OPG's proposal to recover 25% of its nuclear revenues via a capacity charge, please provide your recommended capital structure for OPG's regulated assets. Please also justify your response.

2. Issue 2.1, Exhibit C2, Tab 1, Schedule 1

Assuming the Board determines that OPG's regulated nuclear and hydro-electric businesses should have two distinct stand-alone capital structures, please state your recommended capital structures for each of these two businesses. With respect to the nuclear business, please state your recommended capital structure assuming that:

(a) the Board approves OPG's proposal to recover 25% of its nuclear revenues via a capacity charge; and

(b) the Board does not approve OPG's proposal to recover 25% of its nuclear revenues via a capacity charge.

Please also justify all of your responses.

3. Issue 2.2, Exhibit C2, Tab 1, Schedule 1

If the Board does not approve OPG's proposal to recover 25% of its nuclear revenues via a capacity charge, please provide your recommended return on equity for OPG's regulated assets. Please also justify your response.

4. Issue 2.2, Exhibit C2, Tab 1, Schedule 1

Assuming the Board determines that OPG's regulated nuclear and hydro-electric businesses should have two distinct returns on equity, please state your recommended returns on equity for each of these two businesses. With respect to the nuclear business, please state your recommended return on equity assuming that:

(a) the Board approves OPG's proposal to recover 25% of its nuclear revenues via a capacity charge; and

(b) the Board does not approve OPG's proposal to recover 25% of its nuclear revenues via a capacity charge.

Please also justify all of your responses.

5. Issue 4.1, Exhibit E2, Tab 1, Schedule 1, Table 1

Please provide the annual capacity utilization rates of each of OPG's nuclear reactors for every year from their in-service dates to 2007 inclusive.

6. Issue 5.4, Exhibit B1, Tab 1, Schedule 1, Table 1

Please provide the gross plant (at cost) and accumulated depreciation of the Niagara Plant Group and the Saunders Generating Station as of March 31, 1999. Please also provide a break-out of the major changes (i.e. $100 million or more) to the gross plant (at cost) and accumulated depreciation of the Niagara Plant Group and the Saunders Generating Station between March 31, 1999 and March 31, 2008.

7. Issue 5.4, Exhibit B1, Tab 1, Schedule 1, Table 1

Please provide a break-out of OPG's capital expenditures at the Niagara Plant Group and the Saunders Generating Station for each year from 1999 to 2008 inclusive.

8. Issue 8.2, Exhibit E2, Tab 1, Schedule 1, Table 1

Please forecast Ontario's incremental cost of obtaining replacement electricity supplies in 2008 and 2009 under each of the following scenarios:

(a) the output of OPG's nuclear business is 25% less than forecast; and
(b) the output of OPG's nuclear business is 50% less than forecast.

Please also state all of your assumptions and show all of your calculations.

9. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 9 of 261

With regard to the views of capital market participants included in Ms. McShane's "review" mentioned at page 9:

(a) What returns are investors expecting from their share holdings in the traded utility entities in Canada?
(b) What returns have investors achieved on their share holdings in the traded utility entities in Canada?
(c) How do the returns achieved in part (b) compare to the returns that these investors achieved from holding the market index in Canada?
(d) Please have Ms. McShane[1] provide all of the references consulted in her "review".

[1] For the purpose of Pollution Probe's interrogatories, references to Ms. McShane include both her and Foster Associates, Inc..

10. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Footnote 10, Page 23 of 261

How does the risk of a utility relative to the market index (i.e. the utility's beta) change when there is an increase in the volatility of the equity market?

11. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 25 of 261

Derivations of the CAPM are attributed to Professors Sharpe, Lintner and Mossin. In which of these derivations does it state that the "focus is on the minimum return that will allow a company to attract equity capital"?

12. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 26 of 261

In the first two paragraphs, Ms. McShane argues that allowing capital which was previously captive in Canada to be invested in foreign markets increased domestic returns. If there is captive domestic demand for limited domestic supply of Canadian equities, please have Ms. McShane explain how this leads to lower realized returns.

13. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 28 of 261

(a) Please have Ms. McShane provide all of the evidence/materials that she is aware of to support the following statement: "Consequently, I focused on post-World War II returns, that is, 1947-2006, a period more closely aligned with what today's investors are likely to anticipate over the longer-term".

(b) Does Ms. McShane believe that bond investors over the long-term going forward will systematically underestimate expected inflation for periods of ten years or more? Please explain.

(c) Does Ms. McShane believe that investors over the long-term going forward will anticipate a period where pent-up consumer demand caused by a world war will need to be satisfied, as occurred in the early part of the 1947-2006 period? Please explain.

14. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 29 of 261

In using the historic average risk premiums for the U.S. and U.K. presented on this page:

(a) What adjustment did Ms. McShane make for any differences in risk of these market proxies compared with the market proxy she uses for Canada? Please explain.

(b) What adjustment did Ms. McShane make for the foreign exchange risk premium that Canadian investors would require for investing in either of these two foreign markets? Please explain.

15. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 29 of 261

(a) Please have Ms. McShane explain how the geometric average removes uncertainty.
(b) If we have two return series but one return series has more variability, will they have the same geometric mean? Please explain.

16. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 30 of 261

(a) Please have Ms. McShane identify the "studies of the equity market risk premium that have speculated that the U.S. market risk premium will be lower in the future than in the past". If these studies are not readily accessible to others, please also provide copies of the studies.
(b) Please have Ms. McShane identify the studies that hypothesize that the magnitude of the achieved risk premiums is due to an increase in price/earnings (P/E) ratios. If these studies are not readily accessible to others, please also provide copies of the studies.
(c) Please have Ms. McShane confirm that the hypothesis in part (b) relates to an increase in the price/dividend (D/P) ratio and not the P/E ratio.
(d) As contained in footnote 158 on page 176 of her evidence, please have Ms. McShane confirm that concern about the price/dividend ratio was one of two primary factors that she believes led Fed Chairman Alan Greenspan to warn of a speculative bubble in the equity market as early as 1996.

17. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 30 of 261

Ms. McShane relies on survey findings of market professionals reported by Consensus Economics for her forecast(s) of the yields for 10-year Government of Canada bonds. At the bottom of this page, Ms. McShane states that "a reasonable expected value of the future equity market return is a range of 11.5-12.25%". How does this "reasonable expected value of the future equity market return" for Canada compare with near-term and longer-term forecasts for Canadian equity market returns that are drawn from publicly available surveys of market professionals?

18. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 32 of 261

(a) Please have Ms. McShane explain how the standard deviation of a portfolio changes as the number of individual securities in the portfolio increases.
(b) How did Ms. McShane control for differences in the numbers of securities in each of the ten sectors?

19. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 32 of 261

(a) Please have Ms. McShane confirm that the underlying logic behind the adjusted beta method is that the beta is assumed to revert to a hypothesized true value of 1 over time.

(b) Please have Ms. McShane provide all evidence/materials of which she is aware that there is mean reversion in the betas of Canadian stocks.

(c) In the absence of any evidence that Canadian stock betas exhibit mean reversion to 1 and given that "utility returns have consistently been higher than what raw betas would indicate", does this not imply that utility returns have been too generous? Please explain.

20. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 38 of 261

How do the utility equity returns reported in Table 3 compare with the comparable return estimates for the equity market over the 1956-2006 period?

21. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 39 of 261

How was the optimism bias in analysts' forecasts, which is extensively documented in the scientific literature, removed?

22. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 41 of 261

Please discuss the tenability of the estimated relationship given that the regression includes 30-year treasury yields or a highly correlated counterpart on both sides of the regression equation.

23. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 42 of 261

The returns from the sample of utilities supposedly reflect the ROE determinations of the various regulatory bodies. However, the Canadian ROE determinations include provisions of financial flexibility. This also applies to the two-stage DCF discussion on page 44. Please explain why risk premiums based on the returns for Canadian utilities do not already include a return component that reflects financial flexibility.

24. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 43 of 261

How does using a sample of proxies rather than the subject company mitigate circularity?

25. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 45 of 261

What are the market-to-book ratios of the utility samples examined in Ms. McShane's evidence?

26. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 49 of 261

(a) What official definition of a business cycle was used by Ms. McShane to identify the 1994-2006 period as a complete business cycle in Canada?
(b) If the Canadian business cycle is being measured from peak to peak, what are the two peak years?
(c) If the Canadian business cycle is being measured from trough to trough, what are the two trough years in the 1994-2006 business cycle identified by Ms. McShane?
(d) Why are the years 1990 through 1993 not included in the Canadian business cycle examined in Ms. McShane's evidence?
(e) What year(s) is (are) recession year(s) in the 1994-2006 period in Canada?

27. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 50 of 261

(a) Please have Ms. McShane explain why a similarity in the market/book ratios of the proxy samples relative to the market composites indicates no evidence of market power.
(b) Please have Ms. McShane confirm that none of the firms in the market composites have market power.

28. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 124 of 261

Please have Ms. McShane explain how the discussion in Appendix B relates to the residual income model of stock valuation.

29. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 129 of 261

Please have Ms. McShane confirm that she did not mean to define beta as the "covariability of the security with the market (M)".

30. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 131 of 261

(a) Please have Ms. McShane discuss how her CAPM discussion relates to the Black version of the CAPM.

(b) Please have Ms. McShane discuss how her CAPM discussion relates to conditional (time-varying) multiperiod versions of the CAPM.

31. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 132 of 261

Please have Ms. McShane quantify the portion of the income trust return that was a return of capital and not a return on capital.

32. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 138 of 261

Please have Ms. McShane explain how realized stock returns decrease with an increased investor demand for stocks.

33. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 148 of 261

Please have Ms. McShane identify all of the studies that she refers to the following in her testimony: “several studies of historic and equity risk premiums”. If these studies are not readily accessible to others, please also provide copies of the studies.

34. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Pages 154-156 of 261

Please have Ms. McShane provide references to the peer-reviewed literature that provides support for the methodology that she uses to test the relationship between beta and return in the Canadian equity market.

35. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Pages 161 of 261

Please have Ms. McShane provide her reasoning behind the following statement: “As a pragmatic matter, the application of a constant growth model is compatible with the likelihood that investors do not forecast beyond five years.”

36. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Pages 164 of 261

(a) Please have Ms. McShane discuss all the studies published since 1990 that support her conclusion that “investment analysts’ growth forecasts serve as a better surrogate for investor expectations than historic growth rates”.

(b) Please have Ms. McShane discuss all the studies published since 1990 that do <u>not</u> support her conclusion that “investment analysts’ growth forecasts serve as a better surrogate for investor expectations than historic growth rates”.

37. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Pages 165 of 261

A number of studies argue that the growth of publicly traded firms is less than the growth in GDP. Assuming that this is the case, please have Ms. McShane explain why the growth rates of higher dividend-paying firms (such as the utilities) are expected to be higher than those of lower dividend-paying firms.

38. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Pages 166 of 261

Please have Ms. McShane clarify if “I/B/E/S consensus of analysts’ earnings forecasts for the first five years” refers to a single consensus forecast for the first five years or one consensus forecast for each of the first five years.

39. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Pages 168 and 169 of 261

(a) Please have Ms. McShane identify which screens (such as removing companies that paid no dividends in any year 2001-2006) were applied at the beginning of her estimation period.

(b) Please have Ms. McShane provide the list of Canadian firms used in effecting the comparable earnings test in her filed evidence for Northwest Territories Power Corporation (NTPC) in November 2006 (i.e. one year earlier). Please also have Ms. McShane discuss each change in firm membership between the Canadian sample used in her pre-filed evidence in this proceeding for the comparable earnings test and the Canadian sample used in her filed evidence in the most recent NTPC proceeding for the same test.

40. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Pages 168 and 169 of 261

Please provide peer-reviewed references to support each of the following:

(a) The comparable earnings method has a theoretical basis.

(b) The comparable earnings method can be empirically tested.

(c) The comparable earnings method has been subject to peer review and publication.

(d) The potential rate of error of the comparable earnings method can be determined.

(e) The scientific community is in general agreement on the standards controlling the application of the comparable earnings method.

(f) The theory or method of implementation of the comparable earnings method has been generally accepted by the scientific community.

(g) The comparable earnings method has not been created solely for the purposes of rate of return determination for regulated entities.

41. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Pages 194 and 195 of 261

In the estimation of generation-only betas, Ms McShane states: "I have used assets as a proxy for the relative contribution of each division (or business segment) to the company as a whole".

(a) What empirical evidence exists to support this assumption? If this evidence is not readily accessible to others, please also provide copies of this evidence.
(b) Please have Ms. McShane discuss whether or not the use of this proxy makes any implicit assumption about the relative return-on-assets and risks of each division.

42. Issue 2.2, Exhibit C2, Tab 1, Schedule 1, Page 221 of 261, Schedule 1

(a) Please have Ms. McShane discuss the probability of a negative return over the next year for the regulated portion of a typical utility in the Utilities sector index included in this schedule.
(b) Please have Ms. McShane characterize the probability of a negative return over the next year for a typical non-regulated firm in each of the other 9 sector indices included in this schedule as being lower, the same, or higher than her response to part (a) of this interrogatory.
(c) Please have Ms. McShane explain her response to part (b) of this interrogatory.

43. Issue 2.4, Exhibit C1, Tab 1, Schedule 2, Page 5 of 5

(a) Please explain the inconsistency between OPG's use of the long-term interest-rate forecast for 10-year Government of Canada bonds by Global Insight and Ms. McShane's use of the forecast for the same financial instrument from Consensus Economics.
(b) Please have OPG provide a detailed account of the costs of OPG's hedging activities that are embedded in its effective debt cost forecasts.

44. Issue 2.1, Exhibit C2, Tab 1, Schedule 1, Page 53 of 261

Please provide copies of the debt rating reports from Standard & Poor's and DBRS referenced in footnotes 54-56: Standard & Poor's, *Summary: Ontario Power Generation*, April 24, 2007; Standard & Poor's, *Credit FAQ: Implied Government Support as a Rating Factor for Hydro One Inc. and Ontario Power Generation Inc.*, October 20, 2005.

45. Issue 2.1, Exhibit C2, Tab 1, Schedule 1, Page 59 of 261

Ms. McShane states on page 59:

"Nevertheless, dispatch risk for the regulated assets is currently relatively low. That risk will rise as additional low marginal cost generation (which can bid below cost but receive a price specified in its PPA with the OPA) becomes available or demand drops."

Does Ms. McShane expect that dispatch risk will remain low during the test period? Please explain.

46. Issue 2.1, Exhibit C2, Tab 1, Schedule 1, Page 69 of 261

Ms. McShane states on page 69:

"The Board Report raises a risk that regulated revenues will be indirectly impacted by the market price, as it raises the spectre of caps on regulated payments if they exceed the market price for an extended period of time."

Does Ms. McShane expect that such caps will become a reality during the test period? Please explain.

47. Issue 2.1, Exhibit C2, Tab 1, Schedule 1, Page 73 of 261

Ms. McShane states on page 73:

"Given the significant volatility in uranium prices, which is not predictable and beyond management control, OPG is requesting a variance account to record variances between forecast and actual uranium costs. The proposed variance account would cover the preponderance of OPG's fuel price risk."

Please identify and explain any fuel price risk that would remain in the presence of the requested variance account.

48. Issue 2.1, Exhibit C2, Tab 1, Schedule 1, Page 75 of 261

Ms. McShane states on page 75:

"While Regulation 53/05 mitigates the risks to OPG as it requires that the OEB ensure that OPG recovers its costs related to ONFA, increased cash requirements for funding or a reduction in the time period over which those costs must be recovered could result in material pressures on the regulated payments."

Please explain how "increased cash requirements for funding or a reduction in the time period over which those costs must be recovered" could arise. Would these not be subject to regulatory mitigation should they arise? If not, please explain why not.

49. Issue 2.1, Exhibit C2, Tab 1, Schedule 1, Pages 60 and 63 of 261

Discussing regulatory risks, Ms. McShane states on page 60:

"For purposes of the business risk assessment, I proceed on the assumption that OPG will be treated no differently from any other utility subject to the Board's jurisdiction: OPG will be provided a reasonable opportunity to recover its prudently incurred costs and earn a return that reasonably reflects the risks to which it is exposed."

On page 63, she then states: "On balance I view the regulatory risk for OPG as higher than that of the typical regulated utility in Canada and in Ontario."

Please explain how these two statements are consistent.

50. Issue 2.1, Exhibit C2, Tab 1, Schedule 1, Page 64

Please provide copies of all reports from debt rating agencies supporting the following statements by Ms. McShane on page 64:

"Political intervention in the industry restructuring process to shield customers from the impact of rising market prices for power was the principal reason given by the debt rating agencies for their downgrades to the debt ratings in 2003 of Ontario electric utilities. The debt rating agencies view the risk of further political intervention in the Ontario market as having declined since those debt rating reductions occurred in 2003. Nevertheless, the risk of future political intervention in the market is higher than in other Canadian jurisdictions, as there continue to be unresolved issues in an evolving Ontario electricity marketplace."

51. Issue 2.1, Exhibit C2, Tab 1, Schedule 1, Page 70

Please provide a copy of the following report referenced in footnote 74 on page 70: S&P, *S&P Seeks Improved Risk-Assessment Metrics for U.S. Nuclear Power*, December 20, 2005.

52. Issue 2.1, Exhibit C2, Tab 1, Schedule 1, Page 71

Ms. McShane states on page 71:

"OPG faces significant risk of lost revenues due to longer and more frequent than anticipated outages and higher than expected costs to maintain and repair existing nuclear facilities."

Please have OPG provide its record of outages along with an explanation of how this record compares with an appropriate industry benchmark?

53. Issue 2.1, Exhibit C2, Tab 1, Schedule 1, Page 77

Please provide copies of the following S&P reports referenced in footnotes 83 and 84 on page 77:

US is Looking at Paced Reemergence of the Nuclear Power Option, June 26, 2006 and *Time for a New Start for the U.S. Nuclear Energy?* June 4, 2003.

54. Issue 2.1, Exhibit C2, Tab 1, Schedule 1, Page 80 and Schedule 26

Ms. McShane expresses the "concern … that a BBB rated utility would, at times, be completely shut out of the long-term (30-year) debt market". In footnote 86 she gives an example of Fortis as a Baa3 rated utility that experienced difficulties. In Schedule 26, Ms. McShane includes 6 additional companies that are rated below A by at least one bond rating agency: EPCOR, Newfoundland Power, Nova Scotia Power, Pacific Northern Gas Union Gas and Westcoast Energy.

Please provide all evidence/materials of which Ms. McShane is aware of regarding difficulties accessing financing experienced by any of these six additional companies with a rating of BBB.

55. Issue 2.1, Exhibit C2, Tab 1, Schedule 1, Sections IV. D and IV. E, Pages 81-88

In light of her emphasis on the views of rating agencies, please have Ms. McShane explain if there exists any evidence to suggest that the views of these agencies could be subject to error.

56. Issue 2.1, Exhibit C2, Tab 1, Schedule 1, Section IV. E, Pages 85-88

Ms. McShane refers to business risk profile scores from Standard & Poor's.

Please provide all of the evidence/materials that Ms. McShane is aware of that Standard & Poor's business risk ranking scale is an accurate measure of business risk.

57. Issue 2.1, Exhibit C2, Tab 1, Schedule 1, Page 104

Please provide a copy of *Pipelines/Gas & Electric Utilities*, by Karen Taylor of BMO Capital Markets, dated December 7, 2006.

58. Issue 2.1, Exhibit C2, Tab 1, Schedule 1, Page 192

Ms. McShane states that her sample of vertically integrated utilities used to determine the incremental required return for a 45% equity ratio "has a median S&P debt rating of BBB".

Please explain why such a sample is appropriate for measuring incremental return in light of Ms. McShane's view on page 80 that "a BBB rated utility would, at times, be completely shut out of the long-term (30-year) debt market."

59. Issue 2.1, Exhibit C1, Tab 1, Schedule 2, Page 5, lines 5-7

Please provide the details of OPG's December 21, 2007 bond issue and of the calculation of the credit margin of 130 basis points.

60. Issue 2.1, Exhibit C1, Tab 2, Schedule 1, Tables 2-6

Please provide and explain the interest coverage ratios implied by the data in each of these tables reflecting actual equity ratios for 2005-7 and ratios recommended by Ms. McShane for 2008-9.

61. Pollution Probe Interrogatories (Issues and References as Applicable)

If OPG and its expert(s) (e.g. Ms. McShane) differ in their respective positions regarding responses to Pollution Probe's interrogatories, please identify and explain these differences. In addition, if OPG and its expert(s) have different/additional information (e.g. studies, references, evidence/materials, etc.) as requested by Pollution Probe's interrogatories, please identify and provide this different/additional information.