ONTARIO POWER GENERATION

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March 28, 2018

VIA RESS AND COURIER

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
P.O. Box 2319
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Dear Ms. Walli:

RE: EB-2018-0002 – Application For An Accounting Order Establishing A Deferral Account To Capture The Revenue Requirement Impact On Ontario Power Generation's Prescribed Nuclear Facilities Resulting From Changes In Station End-Of-Life Dates – OPG Interrogatory Responses

In accordance with the EB-2018-0002 Notice of Application and Hearing and Procedural Order No. 1, please find attached OPG's responses to Board Staff interrogatories in the above-referenced matter.

Consistent with the Ontario Energy Board's ("OEB") directions, Ontario Power Generation ("OPG") is providing an electronic copy of this document to intervenors in this proceeding and submitting it on the Board's web portal Regulatory Electronic Submission System ("RESS"). OPG submitted two paper copies of the responses to the above address.

Best Regards,

[Original signed by]

Brenda MacDonald
Vice President, Regulatory Affairs
Ontario Power Generation

Attach.

cc: Fiona O'Connell (OEB) via e-mail
Michael Millar (OEB) via e-mail
Mel Hogg (OPG) via e-mail
Charles Keizer (Torys) via e-mail
EB-2016-0152 Intervenors via e-mail

Board Staff Interrogatory #1

Interrogatory

Ref: December 29, 2017 Accounting Order Application, paragraph 9, 12, 15

Preamble:

OPG's Accounting Order Application (the Application), paragraph 9 states the following:

> As was the case in EB-2015-0374, OPG is not able to provide the annual revenue requirement impact associated with the above noted changes at this time, primarily because final year-end information required to calculate the December 31, 2017 adjustment to the asset retirement obligation is not yet available. OPG will determine the asset retirement obligation adjustment in conjunction with other adjustments necessary to finalize OPG's 2017 annual financial statements...

OPG's Application, paragraph 12 states that the projected deferral account credit balance of $360 million also does not incorporate the following:

> The above impacts are illustrative as they do not reflect adjustments to OPG's proposed capital in-service additions and nuclear rate base values resulting from the OEB's findings in the EB-2016-0152 Decision and Order, which OPG will reflect in the draft Payment Amounts Order submission, or the anticipated year-end 2017 change to the asset retirement obligation and corresponding ARC balances, which will be finalized as part of OPG's 2017 financial year close process and reflected in the 2017 audited annual financial statements. Both of these impacts will be captured in the calculation of the actual revenue requirement impact recorded in the deferral account.

OPG's Application, paragraph 15 states the following:

> OPG expects that information supporting the balance in the proposed account, as well as the timing and manner of its disposition, would be reviewed in a future OPG application. Accordingly, there is no rate impact at this time from this Application.

OEB staff notes that the balance in the proposed account, as well as the timing and manner of its disposition, would be reviewed in a future OPG application, and that there is no rate impact at this time from this Application. However, OEB staff also notes that certain information impacting the proposed deferral account was not available to be provided by OPG until its December 31, 2017 Audited Financial Statements were published and its revised draft Payment Amounts Order submission was made.

OEB staff notes that OPG's 2017 financial results, including its December 31, 2017 Audited Financial Statements, were made publicly available on March 8, 2018.

Question(s):

a) Please provide the certain information, including the adjustment to the asset retirement obligation and other adjustments, impacting the proposed deferral account that is now available, due to the publishing of the December 31, 2017 Audited Financial Statements on March 8, 2018.

b) Please also provide the proposed capital in-service additions and nuclear rate base values resulting from the OEB's findings in the Decision and Order[1], which OPG will reflect in its revised draft Payment Amounts Order submission that may impact the proposed deferral account.

c) Please describe how this information in a) and b) above impacts the proposed deferral account balance at a high level, with an associated explanation.

Response

a) and b)

Chart 1 below provides a break-down of the year-end asset retirement obligation ("ARO") and asset retirement cost ("ARC") adjustment at the program and station level recorded as at December 31, 2017.[2]

Chart 1
Year-End Actual 2017 Adjustment – Assignment of ARO and ARC Adjustment to Nuclear Stations

Line No.	Description	Pickering Units 1 & 4	Pickering Units 5 - 8	Darlington	Prescribed Facilities Total	Bruce A	Bruce B	Bruce Facilities Total	OPG Total
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
	December 31, 2017 Actual:								
1	Decommissioning Program	(1.9)	(29.3)	(0.5)	(31.7)	2.1	1.4	3.5	(28.1)
2	Low and Intermediate Level Waste Storage Program	21.1	37.8	(31.3)	27.5	28.2	16.3	44.5	72.0
3	Low and Intermediate Level Waste Disposal Program	12.6	38.1	(78.3)	(27.7)	9.2	7.2	16.4	(11.2)
4	Used Fuel Disposal Program	28.4	145.7	(18.1)	155.9	(0.7)	(3.7)	(4.4)	151.5
5	Used Fuel Storage Program	15.8	19.3	(15.5)	19.6	(4.0)	(11.3)	(15.4)	4.2
6	ARO Adjustment Assignment to Station Level	75.9	211.5	(143.8)	143.7	34.8	9.9	44.7	188.4
7	Asset Retirement Cost Adjustment	75.9	211.5	(143.8)	143.7	34.8	9.9	44.7	188.4

The 2018-2021 nuclear capital in-service additions and nuclear rate base values for gross plant and accumulated depreciation and amortization that will underpin the amounts recorded in the proposed deferral account can be found in Appendix A, Tables 9 and 10 of OPG's further revised

[1] EB-2016-0152.
[2] In accordance with US GAAP, the year-end 2017 ARO adjustment was calculated using the credit-adjusted risk-free discount rate of 2.94% determined as of December 31, 2017. In determining the discount rate, OPG followed the same approach as in previous instances of ARO adjustments (e.g., as described in EB-2016-0152 Ex L-8.2-1 Staff-207).

EB-2016-0152 Final Draft Payment Amounts Order filed with the OEB on March 23, 2018, subject to the OEB's approval of that order.
Attachment 1 details the revenue requirement impact on the prescribed facilities arising from the above changes to the nuclear liabilities and changes to the nuclear station end-of-life dates effective December 31, 2017 that will be recorded in the proposed deferral account over the 2018-2021 period.

c)
The revenue requirement for the prescribed facilities that will be recorded in the proposed deferral account arises from changes in depreciation and amortization expense for non-ARC balances, as well as from changes in the nuclear liabilities costs including the impact on depreciation of existing ARC balances and the impact of the adjustment to the ARO (and associated ARC) recorded on December 31, 2017. The combined net impact on these elements will result in an overall credit to ratepayers of approximately $138 million over the 2018 to 2021 period (Attachment 1, Table 1, line 19).

The non-ARC impact (Attachment 1, Table 1, line 18) is driven by a decrease in non-ARC depreciation and amortization expense over 2018-2020 as a result of the longer service life reflecting the extension of the Pickering end-of-life dates beyond December 31, 2020 (Attachment 1, line 2, cols. (a)-(c)). This is partially offset by an increase in non-ARC depreciation and amortization expense in 2021 as a result of the end-of-life extension (Attachment 1, line 2, col. (d)). The change in depreciation and amortization expense results in a change in the accumulated depreciation and amortization rate base value (Attachment 1, Table 1a, Note 4). As noted at p. 14 of OPG's application, the change in depreciation and amortization expense and the impact of the associated change in rate base, including the impact on income taxes and cost of capital, will be recorded in the proposed deferral account. These annual amounts will be determined by recalculating the corresponding OEB-approved values reflected in the revenue requirement in the EB-2016-0152 Payment Amounts Order for 2018-2021, by applying the revised Pickering end-of-life dates and holding all other variables constant.

The change in the nuclear liabilities costs over the 2018-2021 period (Attachment 1, Table 1, line 17) is the net effect of the overall decrease in depreciation expense for existing ARC balances (i.e. before the year-end 2017 ARO/ARC adjustment), and the increase in ARC depreciation expense and variable expenses for used fuel and low and intermediate level waste ("L&ILW") management from the year-end 2017 ARO/ARC adjustment. The depreciation expense for existing ARC balances decreases over 2018-2020 and increases in 2021, for the same reason as for non-ARC balances. The 2017 year-end net increase to the carrying book value of the ARO and ARC attributable to the prescribed facilities of $143.7 million (Chart 1, col. (d) above) results in higher ARC depreciation expense and higher return on ARC in rate base over the 2018-2021 period. In addition, there is an increase in variable cost rates and therefore variable expenses over the period as a result of the credit-adjusted risk-free discount rate of 2.94% at the end of 2017 being lower than the discount rate of 3.20% that determined the variable cost rates reflected in the EB-2016-0152 revenue requirement, as per OPG's EBG-2016-0152 Final Draft Payment Amounts Order filed with the OEB on March 23, 2018.[3]

[3] As noted at EB-2016-0152 Ex. N1-1-1, p. 17, footnote 14, variable expenses represent increases in undiscounted cash flows underlying the ARO and therefore are calculated using a credit-adjusted risk-free rate determined as of the date of the latest ARO adjustment.

Numbers may not add due to rounding.

Table 1
Projected Revenue Requirement Impact on Prescribed Facilities of December 31, 2017 Pickering End of Life Changes ($M)

Line No.	Description	2018	2019	2020	2021	Total
		(a)	(b)	(c)	(d)	(e)
	Depreciation and Amortization Expense:					
1	**Asset Retirement Costs** (Note 1, col. (f), lines 1e, 1h, 1k, 1n)	8.0	8.0	8.0	74.5	98.5
2	**Non-Asset Retirement Costs** (Note 2, line 2e)	(114.9)	(122.1)	(154.3)	95.6	(295.7)
3	**Total Depreciation and Amortization Expense Impact**	(106.8)	(114.1)	(146.3)	170.0	(197.1)
	Cost of Capital:					
4	**ARC Rate Base** (Note 3, line 3f)	6.8	6.4	6.0	3.4	22.6
5	**Non-ARC Rate Base** (Note 4, line 4f)	3.7	11.4	20.2	22.1	57.4
6	**Total Cost of Capital Impact**	10.5	17.8	26.3	25.4	80.0
	Other Expenses: (Note 5)					
7	**Used Fuel Storage and Disposal Variable Expenses**	4.2	5.1	3.9	3.9	17.1
8	**Low & Intermediate Level Waste Management Variable Expenses**	0.4	0.5	0.5	0.6	2.1
9	**Total Other Expenses Impact**	4.6	5.6	4.5	4.4	19.1
	Income Taxes:					
10	**Depreciation Expense on Asset Retirement Costs** (line 1 x (25%/75%))	2.7	2.7	2.7	24.8	32.8
11	**Depreciation and Amortization Expense on Non-Asset Retirement Costs** (line 2 x (25%/75%))	(38.3)	(40.7)	(51.4)	31.9	(98.6)
12	**Cost of Capital for ARC Rate Base** (Note 3: (line 3c - 3d - 3g) x (25%/75%))	2.3	2.1	2.0	1.5	7.9
13	**Cost of Capital for Non-ARC Rate Base** (Note 4, line 4g x (25%/75%))	0.8	2.3	4.1	4.5	11.7
14	**Used Fuel Storage and Disposal Variable Expenses** (line 7 x (25%/75%))	1.4	1.7	1.3	1.3	5.7
15	**Low & Intermediate Level Waste Management Variable Expenses** (line 8 x (25%/75%))	0.1	0.2	0.2	0.2	0.7
16	**Total Income Tax Impact**	(31.0)	(31.7)	(41.1)	64.2	(39.7)
17	**Total Nuclear Liabilities Cost Impact** (lines 1 + 4 + 9 + 10 + 12 + 14 + 15)	25.9	26.7	24.7	110.1	187.4
18	**Total Non-ARC Depreciation Impact** (lines 2 + 5 + 11 + 13)	(148.6)	(149.1)	(181.4)	154.0	(325.1)
19	**Grand Total Impact** (lines 17 + 18)	(122.7)	(122.4)	(156.7)	264.1	(137.7)

Numbers may not add due to rounding.

Table 1a

Notes to Table 1

1 The ARC depreciation expense component of the projected addition to the deferral account is calculated as follows ($M):

Line No.		Pickering Units 1 & 4	Pickering Units 5-8	Darlington	(a)+(b)+(c) Total	Total per EB-2016-0152 *	(d) - (e) Impact
		(a)	(b)	(c)	(d)	(e)	(f)
1a	Asset Retirement Cost as at December 31, 2017 Before Adjustment#	82.3	117.1	268.4	467.8		
1b	Asset Retirement Cost Adjustment as at December 31, 2017 (see Chart 1)	75.9	211.5	(143.8)	143.7		
1c	Unamortized Asset Retirement Cost as at December 31, 2017 (line 1a + line 1b)	158.2	328.6	124.6	611.5		
1d	Remaining Useful Life as at December 31, 2017 (months)+	60.0	84.0	420.0			
1e	Annual Depreciation (line 1c / line 1d x 12)	31.6	46.9	3.6	82.2	74.1	8.0
1f	Unamortized Asset Retirement Cost as at December 31, 2018 (line 1c - line 1e)	126.6	281.7	121.1	529.3		
1g	Remaining Useful Life as at December 31, 2018 (months)+	48.0	72.0	408.0			
1h	2019 Annual Depreciation (line 1f / line 1g x 12)	31.6	46.9	3.6	82.2	74.1	8.0
1i	Unamortized Asset Retirement Cost as at December 31, 2019 (line 1f - line 1h)	94.9	234.7	117.5	447.2		
1j	Remaining Useful Life as at December 31, 2019 (months)+	36.0	60.0	396.0			
1k	2020 Annual Depreciation (line 1i / line 1j x 12)	31.6	46.9	3.6	82.2	74.1	8.0
1l	Unamortized Asset Retirement Cost as at December 31, 2020 (line 1i - line 1k)	63.3	187.8	113.9	365.0		
1m	Remaining Useful Life as at December 31, 2020 (months)+	24.0	48.0	384.0			
1n	2021 Annual Depreciation (line 1l / line 1m x 12)	31.6	46.9	3.6	82.2	7.7	74.5
1o	Unamortized Asset Retirement Cost as at December 31, 2021 (line 1l - line 1n)	31.6	140.8	110.4	282.9		

EB-2016-0152 Final Draft Payment Amounts Order ("EB-2016-0152 PAO"), App. A: Table 9, line 9, col. (e) less Table 10, line 9, col. (d) (difference due to rounding)

* Per EB 2016-0152 PAO, App. A, Table 10, col. (b), lines 19, 29, 39, 49

+ Represents the remaining estimated average service life, for accounting purposes, of the nuclear stations as at December 31, 2017 based on accounting end-of-life dates per EB-2018-0002 (December 31, 2022 for Pickering Units 1 & 4; December 31, 2024 for Pickering Units 5-8; December 31, 2052 for Darlington)

2 The non-ARC depreciation and amortization expense component of the projected addition to the deferral account is calculated as follows ($M):

		2018	2019	2020	2021	Total
		(a)	(b)	(c)	(d)	(e)
2a	Unadjusted Pickering non-ARC depreciation and amortization expense (EB-2016-0152 PAO, App. A, Table 10, col. (b), lines 13, 23, 33, 43)	227.7	246.2	287.7	31.5	793.1
2b	Impact of OEB-directed 10% forecast in-service additions reduction in EB-2016-0152	(8.0)	(11.1)	(16.0)	(3.1)	(38.2)
2c	EB-2016-0152 Pickering non-ARC depreciation and amortization expense - Dec 31, 2020 End-of-Life (line 2a + line 2b)	219.7	235.1	271.8	28.3	754.9
2d	Pickering non-ARC depreciation and amortization expense - Dec 31, 2022/2024 End-of-Life#	104.8	113.1	117.5	123.9	459.3
2e	Impact of Pickering end-of-life extension (line 2d - line 2c)	(114.9)	(122.1)	(154.3)	95.6	(295.7)

Calculated by applying the revised Pickering end-of-life dates (Note 1, note +) to the forecast non-ARC Pickering gross plant including forecast in-service additions reflected in the EB-2016-0152 nuclear revenue requirements (EB-2016-0152 PAO, App. A, Table 9, lines 13, 23, 33, 43) and holding all other variables constant, effective January 1, 2018

3 Cost of Capital for ARC Rate Base component of the projected addition to the deferral account is calculated as follows ($M):

		2018	2019	2020	2021
		(a)	(b)	(c)	(d)
3a	Average ARC: Note 1, col. (d), (opening ARC + closing ARC for corresponding year)/2	570.4	488.3	406.1	324.0
3b	Weighted average accretion rate#	4.93%	4.93%	4.93%	4.93%
3c	Return on ARC Rate Base at accretion rate (line 3a x line 3b)*	28.1	24.1	20.0	16.0
3d	EB-2016-0152 Return at accretion rate on lesser of ARC and UNL (EB-2016-0152 PAO, App. A, Tables 12-15, line 7, col.(d))	21.3	17.7	14.0	10.0
3e	EB-2016-0152 Weighted average cost of capital on excess of ARC over UNL+	0.0	0.0	0.0	2.6
3f	Impact of Pickering end-of-life extension (line 3c - line 3d - line 3e)	6.8	6.4	6.0	3.4
3g	Return on equity component of EB-2016-0152 weighted average cost of capital on excess of ARC over UNL^	0.0	0.0	0.0	1.5

Reflects the year-end 2017 ARO adjustment tranche determined at a discount rate of 2.94%, in addition to the existing ARO tranches

* Average ARC is lower than average Unfunded Nuclear Liabilities (UNL) in each year of the 2018-2021 period with the Pickering end-of-life extension

+ Average ARC is lower than average UNL in each year of the 2018-2020 period. For 2021, calculated as Average ARC (EB-2016-0152 PAO, App. A: Table 9, col. (f), line 49 less Table 10, col. (e), line 49) less Average UNL (EB-2016-0152 PAO, App. A, Table 5, line 8, col. (c) and associated Table 5a, Note 4) multiplied by 2021 WACC (Note 4, line 4e)

^ For 2021, calculated as Average ARC (EB-2016-0152 PAO, App. A: Table 9, col. (f), line 49 less Table 10, col. (e), line 49) less Average UNL (EB-2016-0152 PAO, App. A, Table 5, line 8, col. (c) and associated Table 5a, Note 4) x 45% EB-2016-0152 equity ratio x 8.78% EB-2016-0152 ROE).

4 Cost of Capital for non-ARC Rate Base component of the projected addition to the deferral account is calculated as follows ($M):

		2018	2019	2020	2021
		(a)	(b)	(c)	(d)
4a	Opening non-ARC net plant balance impact (line 4c for preceeding year)	0.0	114.9	236.9	391.2
4b	Non-ARC depreciation and amortization expense impact (Note 2, line 2e)	114.9	122.1	154.3	(95.6)
4c	Ending non-ARC net plance balance impact (line 4a + line 4b)	114.9	236.9	391.2	295.7
4d	Non-ARC Rate Base Impact (line 4a + line 4c)/2	57.4	175.9	314.1	343.4
4e	Weighted average cost of capital (EB-2016-0152 PAO, App. A, Tables 12-15, col. (c), line 6)	6.50%	6.46%	6.44%	6.43%
4f	Total Cost of Capital (line 4d x line 4e)	3.7	11.4	20.2	22.1
4g	Return on equity component of cost of capital (line 4d x 45% equity ratio x 8.78% ROE)	2.3	6.9	12.4	13.6

5 The variable expense component of the projected addition to the deferral account is determined by multiplying the differences between (i) and (ii) by the corresponding forecast number of used fuel bundles and low and intermediate level waste ("L&ILW") volumes reflected in the EB-2016-0152 nuclear revenue requirements, where
(i) is the 2018-2021 unit cost rates for each of the Used Fuel Storage and Disposal Programs ($/fuel bundle) and the L&ILW Storage and Disposal Programs ($/$m^3$ of L&ILW) reflecting the 2.94% discount rate used to determined the year-end 2017 ARO adjustment reflecting the Pickering end-of-life extension, and
(ii) is the equivalent 2018-2021 unit cost rates reflected in the corresponding variable expenses included in the EB-2016-0152 nuclear revenue requirements.

Board Staff Interrogatory #2

Interrogatory

Ref: December 29, 2017 Accounting Order Application, page 11

Preamble:

The Application, paragraph 11 states the following:

> Subject to the impact of the December 31, 2017 asset retirement obligation adjustment, OPG proposes that the revenue requirement impact recorded in the proposed deferral account be based on forecast 2018 opening gross plant and accumulated depreciation and amortization amount and forecast 2018-2021 capital in-service additions included in nuclear rate base values that will be approved through the EB-2016-0152 Payment Amounts Order. Using corresponding values proposed in OPG's pre-filed evidence from the EB-2016-0152 application, OPG illustratively estimates that depreciation and amortization expense (both ARC and non-ARC) would decrease by approximately $150M in 2018, $150M in 2019, and $155M in 2020, partially offset by an increase of approximately $95M in 2021, for a net decrease of approximately $360M over the period.

The Application, paragraph 11, footnote 8 states the following:

> Given the magnitude and illustrative nature of the estimates, consequential impacts on cost of capital and income tax components of the revenue requirement have not been included, but would be captured in the actual revenue requirement impact recorded in the proposed deferral account. The non-ARC cost of capital component will be calculated using the OEB-approved capital structure and cost of capital rates that will be reflected in the EB-2016-0152 Payment Amounts Order.

Question(s):

a) Please explain whether the balance in the deferral account is still expected to be a credit balance of $360 million or a different balance.

b) If the deferral account balance is expected to be a credit balance of $360 million, please show the derivation of this balance at a high level from 2018 through 2021, with an associated explanation.

c) If the deferral account balance is expected to be a different number other than a credit balance of $360 million, please update the balance and show the derivation of the revised balance at a high level from 2018 through 2021, with an associated explanation.

Response

a), b) and c)
As noted at page 14 of OPG's application, the $360 million was an illustrative estimate of the impact of the change in the Pickering end-of-life dates on depreciation and amortization expense only, recognizing that depreciation and amortization expense was anticipated to have the largest revenue requirement impact. The $360 million figure was not a projection of the total balance in the deferral account.

The $360 million estimate was provided to indicate directionally that the magnitude of the change in the end-of-life dates was expected to be material. This estimate was based on values in OPG's pre-filed evidence in EB-2016-0152 and did not reflect either reductions to proposed capital in-service amounts determined by the OEB in EB-2016-0152 or the impact of the year-end 2017 adjustment to the asset retirement obligation and associated asset retirement costs, which was not available at the time of the filing of the application for this proceeding. As noted in footnote 15 at page 14 of OPG's application, the estimate also did not include consequential impacts on cost of capital and income tax components of the revenue requirement.

The updated forecast credit to be recorded in the deferral account over the period to the end of 2021 is provided in response to Schedule 1-Staff-1, including a detailed derivation.

Board Staff Interrogatory #3

Interrogatory

Ref: December 29, 2017 Accounting Order Application, paragraph 1, 8
December 28, 2017, Decision and Order, EB-2016-0152, Table 25
EB-2015-0374 decision and order, pages 4, 6, 8

Preamble:

The Application, paragraph 1 states the following:

> OPG has determined that it will change, for accounting purposes, the current end-of-life ("EOL") date for its Pickering nuclear facilities, effective December 31, 2017, to December 31, 2022 for Units 1 and 4 and December 31, 2024 for Units 5 to 8…

The Application, paragraph 8 states the following:

> The financial impact of the December 31, 2017 change in the asset retirement obligation and associated costs for the Bruce facilities, determined in accordance with US GAAP, will be reflected in the Bruce Lease Net Revenues Variance Account in accordance with the EB-2016-0152 Decision and Order and the EB-2016-0152 Payment Amounts Order and is therefore not subject to this Application.

The EB-2015-0374 decision and order, page 4, states the following:

> …as certain costs associated with nuclear liabilities are shared across the nuclear fleet, the changes in end-of-life dates for units at Bruce Power affect Pickering and Darlington.

The EB-2015-0374 decision and order, page 6, states the following:

> ..,The OEB finds that the extension of station end-of-life dates for Bruce Power, Pickering, and Darlington results a change in accounting policy applicable to these assets…

The EB-2015-0374 decision and order, page 8, states the following:

> OPG shall establish the Impact Resulting from Changes in Station End-of-Life Dates (December 31, 2015) Deferral Account, in accordance with Schedule A, effective January 1, 2016.

The December 28, 2017, Decision and Order, EB-2016-0152, Table 5 shows the following regarding station end-of-life dates:

Table 25: Nuclear Station End-of-Life

	Effective January 1, 2013	Effective December 31, 2015
Darlington	December 31, 2051	December 31, 2052
Pickering Units 1&4	December 31, 2020	December 31, 2020
Pickering Units 5-8	April 30, 2020	December 31, 2020
Bruce A Units 1-4	December 31, 2048	December 31, 2052
Bruce B Units 5-8	December 31, 2019	December 31, 2061

Source: Exh F4-1-1, page 3

OEB staff notes that OPG has not made an application for a deferral account related to changes in station end-of-life dates as at December 31, 2016. OPG only made an application as at December 31, 2015 in the EB-2015-0374 proceeding and an application as at December 31, 2017 in the current proceeding.

OEB staff is unclear of:

- the impact of OPG not requesting a deferral account related to changes in station end-of-life dates as at December 31, 2016, particularly since large credit balances are anticipated to be refunded to customers in the EB-2015-0374 and EB-2018-0002 deferral accounts.

- why the EB-2015-0374 proceeding deferral account captured the impact of changes in station end-of-life dates for Bruce Power, Pickering and Darlington, whereas the current EB-2018-0002 proceeding only involved Pickering.

- If the end-of-life dates as noted above for Darlington and Bruce are currently estimated to match the dates in Table 25 from the Decision and Order.

- if it is determined that the changes in end-of-life dates for units are applicable in this proceeding related to Bruce Power units, whether there are impacts in this Application on Pickering or any other units (e.g. Darlington) of any potential changes of end-of-life dates for units at Bruce Power,. However, OEB staff also notes that OPG stated in paragraph 8 of its current application that "the financial impact of the December 31, 2017 change in the asset retirement obligation and associated costs for the Bruce facilities… will be reflected in the Bruce Lease Net Revenues Variance Account … and is therefore not subject to this Application."

Question(s):

a) Please explain why OPG did not request a deferral account related to changes in station end-of-life dates as at December 31, 2016, particularly since large credit balances are anticipated to be refunded to customers in the EB-2015-0374 and EB-2018-0002 deferral accounts.

b) If a deferral account is required related to changes in station end-of-life dates as at December 31, 2016, please update OPG's evidence as required to refer to the correct information. Please clarify and quantify any associated rate impact.

c) Please state why in the current EB-2018-0002 proceeding, changes in station end-of-life dates are anticipated only for Pickering Units, whereas in the EB-2015-0374 proceeding changes in end-of-life dates for Bruce Power, Pickering and Darlington were anticipated.

d) Please confirm that the end-of-life dates as noted in Table 25 above for Darlington and Bruce have not changed. If there is any change estimated, please update the evidence as required.

e) If it is determined that the changes in end-of-life dates for units are applicable in this proceeding related to Bruce Power units, different to what is described in paragraph 8 of the Application, please describe whether any units at Pickering and Darlington should be further affected, consistent with the EB-2015-0374 decision and order.

f) Have any other changes been made to end-of-life dates for any station that have not been reflected in the proposed deferral accounts in the EB-2018-0002 proceeding? If there is any change estimated, please update the evidence as required.

g) Has OPG made any other updates, including any updates to the end-of-life dates, with an associated impact on the revenue requirement, subsequent to filing its Application on December 29, 2017? If there is any change estimated, please update the evidence as required.

Response

a) to e)

The end of life dates accepted by the OEB in the EB-2016-0152 Decision and Order, p. 85 (i.e. Table 25 referred to in part d) of the question) reflect the revisions to station end-of-life dates for accounting purposes effective December 31, 2015 explained in the EB-2015-0374 application. The factors that gave rise to these end-of-life changes differed for each of the Pickering, Darlington and Bruce facilities. These revised end-of-life dates continue to be in effect until new information and considerations support a change to end-of-life dates. There were no changes to station end-of-life dates as of December 31, 2016 as there was insufficient new information to support such a change.

OPG confirms that the end-of-life dates as noted in Table 25 above for Darlington and Bruce facilities have not changed. The information provided in EB-2015-0374 and EB-2016-0152 (Ex. F4-1-1, pp. 5-7) to support the revisions to the Darlington and Bruce facilities effective December 31, 2015 remains the best information supporting the end-of-life dates for those facilities. As a result, changes to end-of-life dates for the Darlington and Bruce facilities are not part of this application.

There were no other changes to the station end-of-life dates between December 31, 2015 and the effective date of December 31, 2017 for the changes in the Pickering end-of-life dates outlined in OPG's application for this proceeding. As a result, no additional deferral accounts related to station end-of-life date changes beyond the account requested in this application were necessary.

For greater clarity, OPG notes that for the period from January 1, 2016 to May 31, 2017, the revenue requirement impact on the prescribed facilities of the December 31, 2015 revisions in the end-of-life dates was recorded in the Impact Resulting from Changes in Station End-of-Life Dates (December 31, 2015) Deferral Account authorized by the OEB in the EB-2015-0374 proceeding. In accordance with the terms of the deferral account, this impact ceased being recorded in the account effective June 1, 2017, the effective date for new payment amounts established in the EB-2016-0152 proceeding, which reflected the December 31, 2015 end-of-life date revisions in the nuclear revenue requirement per the Final Draft Payment Amounts Order filed with the OEB on March 23, 2018.

For further clarity with respect to part e) of the question, although there has been no change in the end-of-life dates for Bruce facilities, OPG notes that such a change would typically impact the nuclear liabilities costs attributable to the Pickering and Darlington stations through a change in lifecycle fuel and waste volumes. As noted at p. 15 of the application, certain costs associated with nuclear liabilities are, by their nature, shared across the nuclear fleet. Therefore, changes in lifecycle fuel and waste volumes resulting from changes to a particular station end-of-life date typically impact asset retirement obligations and asset retirement costs for all three nuclear stations.

f) There are no other changes to end-of-life dates for any station that have not been reflected in the proposed deferral accounts in the EB-2018-0002 proceeding, up to the filing of this response on March 28, 2018.

g) OPG understands the question's reference to "any other updates … with an associated impact on revenue requirement" to pertain to the subject matter of this application. As outlined on p. 11 of the application, an accounting order is required if OPG proposes either an accounting change impacting the calculation of its nuclear liabilities or a change in the end-of-life dates of its prescribed nuclear facilities for depreciation and amortization purposes. OPG confirms that there have been no other such changes for these matters subsequent to the filing of OPG's application on December 29, 2017, up to the filing of this response on March 28, 2018.

Board Staff Interrogatory #4

Interrogatory

Ref: December 29, 2017 Accounting Order Application, page 19 & 20
EB-2015-0374 decision and order, Schedule A

Preamble:

Regarding pages 19 & 20 of the Application, the descriptions for Entry 1 and Entry 2 are different when comparing the Application to Schedule A of the EB-2015-0374 decision and order. The tracked changes below show how the EB-2015-0374 decision and order was reflected, when compared to the Application's Accounting Order (e.g. the phrase "to record the impact of the change in nuclear liabilities…" was reflected in the EB-2015-0374 decision and order).

Entry 1: Nuclear liability revenue requirement for prescribed facilities
To record the impact of the change in ~~on~~ nuclear liabilities ~~costs~~ resulting from changes in end-of-life dates on Asset Retirement Cost ("ARC") depreciation, the associated impacts on the return on rate base and variable used fuel and waste management expenses, and the tax impact of the refund to ratepayers ~~settlement with customers~~ of the net amount.

Entry 2: Non-ARC revenue requirement impact for prescribed facilities
To record the impact of the change in nuclear station lives on non-ARC depreciation expense based on December 31, 2015 fixed asset balances, the associated impact on ~~the return on~~ net rate base through the change in accumulated depreciation, and the tax impact of the refund to ratepayers ~~settlement with customers~~ of the net amount.

Question(s):

a) Please explain why the journal entries in the Accounting Order submitted as part of the Application, differ from the Accounting Order approved as part of the EB-2015-0374 decision and order.

b) Please update OPG's evidence as required to refer to address the differences in the journal entries.

Response

a) and b)

The journal entries for the deferral account proposed in this application are substantially the same as the journal entries supporting the deferral account approved in EB-2015-0374. The wording changes noted in the interrogatory were made for greater clarity and accuracy, as explained below.

"impact on nuclear liabilities costs" This wording was used in this application because, while the liability does change, it is the impact *on costs* resulting from the change in nuclear liabilities that is recorded in the account. The words "of the change" are not required as they are redundant with the words "impact on".

"settlement with customers" This wording was used in this application because not all elements of the revenue requirement impact arising from the change in the Pickering station end-of-life dates are a reduction to costs, as set out in Ex. L-1 Staff-1. Therefore, using the more general term "settlement with" rather than "refund to" is more accurate. The term "customers" replaces the term "ratepayers" to better align with the OEB's customer focus. The term "settlement with customers" was also used to describe the impact on non-asset retirement cost impacts for consistency.

"based on December 31, 2015 fixed asset balances" This term is not applicable for the proposed account and was therefore deleted. In its application, OPG has proposed that the impact of the Pickering station end-of-life date changes be based on the capital in-service balances approved in EB-2016-0152 (i.e. incremental to the revenue requirement approved in EB-2016-0152).

"the return on" This term was added in this application for greater accuracy because it is not the impact on net rate base that is recorded in the account but rather *the return on* the rate base.

Board Staff Interrogatory #5

Interrogatory

Ref: December 29, 2017 Accounting Order Application, page 11

The Application, paragraph 11 states the following:

> Subject to the impact of the December 31, 2017 asset retirement obligation adjustment, OPG proposes that the revenue requirement impact recorded in the proposed deferral account be based on forecast 2018 opening gross plant and accumulated depreciation and amortization amount and forecast 2018-2021 capital in-service additions included in nuclear rate base values that will be approved through the EB-2016-0152 Payment Amounts Order. Using corresponding values proposed in OPG's pre-filed evidence from the EB-2016-0152 application, OPG illustratively estimates that depreciation and amortization expense (both ARC and non-ARC) would decrease by approximately $150M in 2018, $150M in 2019, and $155M in 2020, partially offset by an increase of approximately $95M in 2021, for a net decrease of approximately $360M over the period.

OEB staff notes that OPG has indicated that the balance in the deferral account is material, and will be a credit balance of at least $360 million. OEB staff notes that OPG has not provided in its application the following information – "causation" and "prudence". In the event an applicant seeks an accounting order to establish a new DVA, the following eligibility criteria must be met:[1]

- Causation
- Materiality
- Prudence

Question(s):

a) Please provide the information related to "causation" and "prudence", which are necessary for a new DVA to be established.

[1] Filing Requirements For Electricity Distribution Rate Applications - 2017 Edition for 2018 Rate Applications - Chapter 2 Cost of Service, July 20, 2017, Section 2.9.6 Establishment of New Deferral and Variance Accounts

Response

OPG's filing of this application for an accounting order related to the Pickering station end-of-life changes is required by the OEB's EB-2012-0002 and EB-2013-0321 decisions and orders[2] that outline the criteria where this requirement applies, as also recognized in the EB-2016-0152 Decision and Order of December 28, 2017 (p. 86). These requirements outline the circumstances when OPG must file an accounting order application in relation to a change in nuclear station end-of-life dates, or certain other changes related to nuclear liabilities. This was the same basis for OPG's application for an accounting order in EB-2015-0374, which resulted in the establishment of the Impact Resulting from Changes in Station End-of-Life Dates (December 31, 2015) Deferral Account.

One of the requirements for an accounting order application discussed above is that the revenue requirement impact of the nuclear station end-of-life change must not be reflected in the current or proposed payment amounts. This satisfies the criterion of causation, which requires that "the forecasted expense must be clearly outside of the base upon which rates were derived".[3] As described in the application in this proceeding, the revenue requirement impact is incremental to that established pursuant to the EB-2016-0152 Decision and Order, as reflected in OPG's Final Draft Payment Amounts Order filed with the OEB on March 23, 2018.

OPG does not believe that the prudence test is applicable to this accounting order application for a change in Pickering's end-of-life. An accounting end-of-life date change simply reflects the reality that OPG has achieved high confidence in units' expected operation beyond 2020. As noted in OPG's application for this proceeding, the extension of the Pickering end-of-life dates is consistent with the EB-2016-0152 Decision and Order, including the OEB's acceptance of the OPG's 2017-2021 operating costs and nuclear generation forecast associated with the continued operation of Pickering beyond 2020, as well as OPG's evidence on the determination of Pickering's end-of-life for accounting purposes.[4]

In addition, OPG notes that the change in the Pickering end-of-life dates was implemented in order to ensure that OPG's financial statements continue to be fairly stated in accordance with United States Generally Accepted Accounting Principles, the underlying financial accounting framework previously accepted by the OEB for setting OPG's payment amounts.

[2] EB-2013-0321 Decision p. 127; requirement was originally established in the EB-2012-0002 Payment Amounts Order, p. 7 and EB-2013-0321 Payment Amounts Order, p.p. 9-10.
[3] Filing Requirements For Electricity Distribution Rate Applications - 2017 Edition for 2018 Rate Applications - Chapter 2 Cost of Service, July 20, 2017, Section 2.9.6
[4] EB-2016-0152 Decision and Order, p. 10