

1 **UNDERTAKING J14.1**

2
3 **Undertaking**

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5 To provide Nuclear In-Service 2016 year end numbers, on same basis as Ex. D2-1-3,
6 Table 4.
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11 **Response**

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14 An update of Ex. D2-1-3 Table 4 to include nuclear in-service 2016 year end numbers is
15 provided in Attachment 1.
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17 The lower 2016 actual nuclear in-service capital amounts compared to the 2016 budget
18 reflects project delays and deferrals that moved some or all of the planned in-service
19 declarations for each applicable project beyond 2016.
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21 As of Q1 2017, \$70.3M that was planned for 2016 has been placed in-service in 2017.
22 This shift from 2016 into 2017 is in addition to the forecast in-service amount for 2017.
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Numbers may not add due to rounding.

Table 1
 D2-1-3 Table 4 Updated for 2016 Actuals
 Comparison of In-Service Capital Additions - Nuclear Operations (\$M)

Line No.	Business Unit	2013 Budget	(c)-(a) Change	2013 Actual	(g)-(c) Change	2014 OEB Approved	(g)-(e) Change	2014 Actual	(k)-(g) Change	2015 OEB Approved	(k)-(i) Change	2015 Actual
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	Darlington NGS	89.9	(10.0)	79.9	(48.8)	43.8	(12.8)	31.1	75.9	7.7	99.3	107.0
2	Pickering NGS	53.6	41.3	94.9	(26.2)	48.8	19.9	68.7	3.0	12.5	59.1	71.7
3	Nuclear Support Divisions ¹	17.4	10.2	27.6	(1.6)	6.4	19.6	26.0	(22.9)	0.7	2.4	3.1
4	Subtotal	160.8	41.6	202.4	(76.7)	99.1	26.7	125.7	56.0	20.9	160.9	181.8
5	Supplemental In-Service Forecast ²	0.0	0.0	0.0	0.0	37.9	(37.9)	0.0	0.0	99.1	(99.1)	0.0
6	Total Portfolio In-Service Forecast	160.8	41.6	202.4	(76.7)	137.0	(11.3)	125.7	56.0	120.0	61.7	181.8
7	Minor Fixed Assets	19.9	(9.7)	10.2	12.6	21.3	1.6	22.9	(0.5)	21.7	0.6	22.3
8	Total In-Service Capital Additions	180.7	31.9	212.6	(64.0)	158.3	(9.7)	148.6	55.5	141.7	62.4	204.1

Line No.	Business Unit	2015 Actual	(e)-(a) Change	2016 Budget	(e)-(c) Change	2016 Actual	(g)-(e) Change	2017 Plan	(i)-(g) Change	2018 Plan	(k)-(i) Change	2019 Plan
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
9	Darlington NGS	107.0	112.8	331.4	(111.6)	219.8	(38.4)	181.3	(29.4)	152.0	10.4	162.4
10	Pickering NGS	71.7	(23.8)	164.9	(117.0)	47.9	38.1	86.0	(70.2)	15.8	(13.0)	2.8
11	Nuclear Support Divisions ¹	3.1	(1.3)	17.1	(15.3)	1.8	5.1	6.9	(3.3)	3.6	(3.6)	0.0
12	Subtotal	181.8	87.7	513.4	(243.9)	269.5	4.8	274.3	(102.9)	171.4	(6.2)	165.2
13	Supplemental In-Service Forecast ²	0.0	0.0	(47.4)	47.4	0.0	88.7	88.7	35.1	123.8	(68.8)	55.0
14	Total Portfolio In-Service Forecast	181.8	87.7	466.0	(196.5)	269.5	93.5	363.0	(67.7)	295.2	(75.0)	220.2
15	Darlington New Fuel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	Minor Fixed Assets	22.3	0.2	31.0	(8.5)	22.5	3.5	26.0	(6.0)	20.0	(0.9)	19.1
17	Total In-Service Capital Additions	204.1	87.9	497.0	(205.0)	292.0	97.0	389.0	(73.7)	315.2	(75.9)	239.3

Line No.	Business Unit	2019 Plan	(c)-(a) Change	2020 Plan	(e)-(c) Change	2021 Plan
		(a)	(b)	(c)	(d)	(e)
18	Darlington NGS	162.4	(102.4)	60.0	(21.3)	38.7
19	Pickering NGS	2.8	(2.8)	0.0	0.0	0.0
20	Nuclear Support Divisions ¹	0.0	0.0	0.0	0.0	0.0
21	Subtotal	165.2	(105.3)	60.0	(21.3)	38.7
22	Supplemental In-Service Forecast ²	55.0	150.7	205.7	(48.0)	157.6
23	Total Portfolio In-Service Forecast	220.2	45.4	265.6	(69.3)	196.3
24	Darlington New Fuel	0.0	15.3	15.3	(15.3)	0.0
25	Minor Fixed Assets	19.1	0.4	19.5	(0.1)	19.3
26	Total In-Service Capital Additions	239.3	61.1	300.4	(84.8)	215.6

Notes:

- 1 Includes Engineering, Inspection and Maintenance Services, and Security & Emergency Services.
- 2 Supplemental forecast to reconcile BCS in-service estimates to final business plan (see Ex. D2-1-3, Section 4.0).

UNDERTAKING J14.2

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Undertaking

To update Ex. F2-1-1, Table 1 for 2016 actual.

Response

An update of Ex F2-1-1, Table 1 for 2016 actual costs is provided in Attachment 1.

F2-1-1 Table 1 Updated for 2016 Actuals
Operating Costs Summary - Nuclear (\$M)

Line No.	Cost Item	2013 Actual	2014 Actual	2015 Actual	2016 Actual	2017 Plan	2018 Plan	2019 Plan	2020 Plan	2021 Plan
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
	OM&A:									
	Nuclear Operations OM&A									
1	Base OM&A	1,127.7	1,127.1	1,159.6	1,182.4	1,210.6	1,226.0	1,248.4	1,264.7	1,276.3
2	Project OM&A	105.7	101.9	115.2	89.3	113.7	109.1	100.1	100.2	86.8
3	Outage OM&A	277.5	221.3	313.7	306.7	394.6	393.8	415.3	394.4	308.5
4	Subtotal Nuclear Operations OM&A	1,510.8	1,450.3	1,588.5	1,578.3	1,718.9	1,728.9	1,763.8	1,759.4	1,671.6
5	Darlington Refurbishment OM&A	6.3	6.3	1.6	3.1	41.5	13.8	3.5	48.4	19.7
6	Darlington New Nuclear OM&A ¹	25.6	1.5	1.3	0.6	1.2	1.2	1.2	1.3	1.3
7	Allocation of Corporate Costs	428.4	416.2	418.8	426.2	448.9	437.2	442.7	445.0	454.1
8	Allocation of Centrally Held and Other Costs ²	413.5	416.9	461.0	329.3	80.2	118.2	108.3	91.1	81.3
9	Asset Service Fee	22.7	23.3	32.9	34.1	27.9	27.9	28.3	22.9	20.7
10	Subtotal Other OM&A	896.5	864.1	915.5	793.2	599.7	598.3	584.1	608.6	577.1
11	Total OM&A	2,407.3	2,314.5	2,504.0	2,371.5	2,318.6	2,327.1	2,347.9	2,368.0	2,248.7
12	Nuclear Fuel Costs	244.7	254.8	244.3	263.1	219.9	222.0	233.1	228.2	212.7
	Other Operating Cost Items:									
13	Depreciation and Amortization	270.1	285.3	298.0	278.1	346.9	378.7	384.0	524.9	338.1
14	Income Tax	(76.4)	(61.5)	(31.8)	(36.5)	(18.4)	(18.4)	(18.4)	51.2	51.7
15	Property Tax	13.6	13.2	13.2	14.1	14.6	14.9	15.3	15.7	17.0
16	Total Operating Costs	2,859.3	2,806.2	3,027.8	2,890.4	2,881.6	2,924.4	2,961.9	3,187.9	2,868.2

Notes:

- 1 Nuclear Operations expenditures to maintain the Nuclear New Build option. In addition there are allocated corporate costs (included in line 7) for Nuclear New Build of \$0.2M in 2016, \$1.1M in 2017, \$0.2M in 2018, \$0.5M in 2019, \$0.5M in 2020 and \$0.5M in 2021.
- 2 Comprises centrally-held costs and amounts of approximately \$1M-\$6M per year for machine dynamics and performance testing services provided by Hydro Thermal Operations in support of Nuclear Operations.

1 **UNDERTAKING J14.3**
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3 **Undertaking**
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5 To update Ex. F2-2-1, Table 2 for 2016 actual.
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11 **Response**
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14 An update of Ex. F2-2-1, Table 2 to include 2016 Base OM&A Actuals is provided in
15 Attachment 1.
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17 The increase in Base OM&A from 2015 to 2016 is primarily due to an inventory write-off
18 (reflected in the Other Base OM&A category) as well as overtime and purchased
19 services requirements. Base labour declined due to greater than anticipated attrition,
20 which OPG was able to partially offset by a revised mix of additional overtime and other
21 purchase services.
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23 While the mix of Base OM&A fluctuates each year, total Base OM&A is forecast to grow
24 at a steady rate over the Test Period, in line with historical actuals.
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Numbers may not add due to rounding.

F2-2-1 Table 2 Updated for 2016 Actuals
Base OM&A - Nuclear (\$M)

Line No.	Resource Type	2013 Actual	2014 Actual	2015 Actual	2016 Actual	2017 Plan	2018 Plan	2019 Plan	2020 Plan	2021 Plan
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1	Labour ¹	832.4	827.1	834.0	807.2	859.0	846.9	874.3	885.0	887.9
2	Overtime ¹	48.6	46.7	54.5	63.7	46.1	46.5	46.1	47.4	47.8
3	Augmented Staff	3.1	3.6	4.4	6.7	4.5	3.5	3.0	2.6	1.6
4	Materials	85.1	73.4	83.4	81.7	68.4	68.2	68.5	71.1	70.8
5	License	34.2	32.6	34.5	36.0	37.2	38.7	39.6	40.2	40.6
6	Other Purchased Services	100.0	98.7	108.4	129.1	161.1	185.1	180.8	178.3	187.3
7	Other	24.3	44.9	40.3	58.0	34.2	37.0	36.2	40.2	40.3
8	Total Base OM&A	1,127.7	1,127.1	1,159.6	1,182.4	1,210.6	1,226.0	1,248.4	1,264.7	1,276.3

Notes:

- 1 Includes Regular and Non-Regular staff.