

## PROJECT OM&A – NUCLEAR

### 1.0 PURPOSE

This evidence provides a description of the nuclear project OM&A budget (excluding Darlington Refurbishment) for the historical years, bridge year, and test period.

### 2.0 OVERVIEW

OPG is requesting approval of forecast project OM&A expenditures during the test period of \$113.7M (2017), \$109.1M (2018), \$100.1M (2019), \$100.2M (2020) and \$86.8M (2021) as presented in Ex. F2-3-1 Table 1.

The level of project OM&A expenditures reflects forecasted work program demands. The increase in 2017 is mainly due to planned increases in minor modification spending at Pickering and Darlington, with the slight decreases in spending from 2018 to 2020 reflecting reduced spending at Darlington while units are in refurbishment, offset by increased spending for Pickering Extended Operations. The reduction in 2021 reflects reductions in spending at Pickering as it approaches its end of commercial operations.

Since the last filing (EB-2013-0321), OPG has completed three major OM&A projects (cost >\$20M). These projects are discussed in Ex. F2-3-3.

### 3.0 PROJECT OM&A EXPENDITURES

OPG's corporate policy defines a project (capital or OM&A project) as a temporary, unique endeavour undertaken outside the routine base activities of the normal work program. The final decision on whether work will be classified as a nuclear project is made by the Asset Investment Screening Committee ("AISC") having regard to the complexity and materiality of the work. A description of the initiation, review and approval process for nuclear projects including OM&A projects is provided in Ex. D2-1-1.

Nuclear project OM&A expenditures for 2013-2021 are shown in Ex. F2-3-1 Table 1 as Project OM&A (Portfolio) and Non-portfolio projects:

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Project OM&A (Portfolio) is made up of the following:

- “Portfolio Projects (Allocated)”, which is the sum of the AISC-approved budgets for all projects that have an approved business case summary (“BCS”).
- “Portfolio Projects (Unallocated)”, which is the remaining budget available to cover the cost of projects that are progressing through the review and approval process but do not have an AISC-approved budget or an approved BCS. A list of these projects is provided in Ex. F2-3-3 Table 4.
- “Infrastructure” , which includes four elements:
  - Funding for staff that do not support specific projects but provide management oversight and direction, administration and coordination of project portfolio activities, and ensure compliance with OPG governance and standards.
  - An amount for minor modifications at each of the two nuclear sites, inspection and maintenance services, and security functions. Minor modifications are lower cost modifications (generally less than \$200k per generating unit) for which the full project management process is unwarranted. For administrative efficiency, these modifications are funded via a drawdown of the minor modifications budget allocated to each station and central facilities.
  - An amount for project conceptual funding to undertake project initiation work, as discussed in Ex. D2-1-1, section 3.0.
  - An amount for capital projects that have been cancelled and written-off. As the write-off occurs in the year of the cancellation decision and cannot be predicted, there is no budget allocated for these items.

25 Non-portfolio projects are listed separately from the Project OM&A (Portfolio) due to their  
26 extraordinary nature. There are four non-portfolio projects consisting of 1) Pickering  
27 Continued Operations, and 2) the related Fuel Channel Life Cycle Management Project  
28 (completed in 2014, see EB-2013-0321 Ex. F2-2-3 for a detailed discussion of this project),  
29 3) the Fuel Channel Life Extension Project, and 4) Pickering Extended Operations. Of the  
30 \$307M in enabling costs for Pickering Extended Operations (see Ex. F2-2-3), Project OM&A  
31 expenditures of \$61.6M are required to complete the Periodic Safety Review and the Fuel

1 Channel Life Assurance Project.

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3 OPG's total annual project OM&A (portfolio and non-portfolio) expenditures are in the range  
4 of \$86.8M to \$115.2M for the period 2013-2021 (average is \$103.4M) as shown in Ex. F2-3-1  
5 Table 1. The major variations in project OM&A expenditures over this period include the  
6 following:

- 7 • Allocated and Unallocated portfolio projects in 2014 were below OEB approved and  
8 budget amounts. This was primarily due to AISC direction to reprioritize projects  
9 within the portfolio with increased funding on minor modifications, Fukushima and  
10 Fuel Channel Life Extension projects. The gradual ramp-up on these projects resulted  
11 in lower than budgeted spending in 2014.
- 12 • Allocated projects were in excess of OEB approved amounts in 2015 due to projects  
13 reclassified from Darlington Refurbishment (as described in Ex. D2-1-2 section 3.1).
- 14 • Maintaining project OM&A expenditures at Pickering to address life cycle aging of  
15 equipment and regulatory requirements resulting from the decision to operate  
16 Pickering until 2022/2024. Project OM&A expenditures at Pickering begin to decline  
17 in 2021 in anticipation of the end of commercial operations in 2022/2024.
- 18 • Infrastructure costs incurred during 2013-2015 were higher than planned due to  
19 capital project cancellations that were written-off and the need for additional minor  
20 modifications at Darlington and Pickering. As previously identified, write-off amounts  
21 are not budgeted in advance and can impact actual results in any given year.
- 22 • Infrastructure costs in the test period peak at \$44.0M in 2017 before declining. Minor  
23 modifications allocations at Darlington and Pickering increase by \$5M per station. An  
24 additional \$2.5M per year in funding for conceptual development has been allocated  
25 to complete more engineering to better estimate the cost and schedule of new  
26 projects prior to first approval. Infrastructure funding declines starting in 2018 as  
27 Pickering approaches its end of commercial operations.
- 28 • Pickering Continued Operations expenditures were completed in 2015.
- 29 • Fuel Channel Life Extension project costs increase in 2016 and 2017 due to  
30 increased scope and delays in completing planned work in 2014 and 2015. The  
31 impact of the increased scope is partly offset by co-funding by Bruce Power. The

1 project is scheduled to be completed by 2018.

2 • Pickering will be undertaking incremental outage days and work activities in 2016-  
3 2020 to enable Pickering Extended Operations. A portion of the \$307M in enabling  
4 costs for Pickering Extended Operations (see Ex. F2-2-3) includes Project OM&A  
5 expenditures to complete the Periodic Safety Review and the Fuel Channel Life  
6 Assurance Project.

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8 Nuclear Project OM&A expenditures have also been categorized in Ex. F2-3-1 Table 2 as  
9 regulatory, sustaining or value enhancing/strategic. As indicated in Ex. F2-3-1 Table 2, the  
10 majority of project OM&A expenditures relate to sustaining projects required to operate safely  
11 and maintain unit reliability.

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13 Regulatory projects are in decline with project OM&A spending on Fukushima projects  
14 expected to end in 2017. Notable OM&A projects undertaken in response to the Fukushima  
15 accident include the development and implementation of Severe Accident Management  
16 Guidelines to improve operator response to an event that exceeds the design basis for the  
17 plant; enhancements to emergency response plans to mitigate the impacts of potential off-  
18 site releases due to multi-unit events; and a major exercise involving all levels of government  
19 to confirm the adequacy of emergency response plans to a major event affecting both the  
20 site and the surrounding community. However, the regulatory environment continues to  
21 evolve, which results in additional regulatory projects in the test period

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23 Exhibit F2-3-3 presents further details of OM&A projects.

Numbers may not add due to rounding.

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 EB-2016-0152  
 Exhibit F2  
 Tab 3  
 Schedule 1  
 Table 1

Table 1  
 Project OM&A Summary - Nuclear (\$M)

Line No.	Category	2013 Actual	2014 Actual	2015 Actual	2016 Budget	2017 Plan	2018 Plan	2019 Plan	2020 Plan	2021 Plan
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
	<b>Portfolio Projects (Allocated)</b>									
1	Darlington NGS	7.2	9.1	19.6	31.3	26.4	25.2	7.6	0.8	0.0
2	Pickering NGS	11.4	16.0	7.2	13.4	10.3	11.9	0.0	0.0	0.0
3	Nuclear Support Divisions	30.3	17.6	9.1	9.4	4.7	0.3	0.0	0.0	0.0
4	<b>Subtotal Portfolio Projects (Allocated)</b>	<b>48.9</b>	<b>42.7</b>	<b>35.9</b>	<b>54.1</b>	<b>41.3</b>	<b>37.4</b>	<b>7.6</b>	<b>0.8</b>	<b>0.0</b>
5	Infrastructure	38.4	38.1	64.8	35.8	44.0	37.0	37.0	33.0	29.0
6	Portfolio Projects (Unallocated)	0.0	0.0	0.0	(11.7)	13.7	16.1	37.2	47.8	57.9
7	<b>Subtotal Project OM&amp;A (Portfolio) (line 4+5+6)</b>	<b>87.4</b>	<b>80.8</b>	<b>100.7</b>	<b>78.2</b>	<b>98.9</b>	<b>90.4</b>	<b>81.7</b>	<b>81.5</b>	<b>86.8</b>
8	Pickering Continued Operations	9.2	7.9	2.2	0.0	0.0	0.0	0.0	0.0	0.0
9	Pickering Extended Operations	0.0	0.0	0.0	4.0	2.5	18.0	18.4	18.7	0.0
10	Fuel Channel Life Cycle Mgmt Project	9.2	8.3	2.3	0.4	0.0	0.0	0.0	0.0	0.0
11	Fuel Channel Life Extension Project	0.0	4.9	10.0	15.6	12.3	0.7	0.0	0.0	0.0
12	<b>Total Project OM&amp;A</b>	<b>105.7</b>	<b>101.9</b>	<b>115.2</b>	<b>98.2</b>	<b>113.7</b>	<b>109.1</b>	<b>100.1</b>	<b>100.2</b>	<b>86.8</b>

Numbers may not add due to rounding.

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Exhibit F2  
Tab 3  
Schedule 1  
Table 2

Table 2  
Project OM&A Summary - Nuclear Facility Projects (Allocated) (\$M)  
By Project Category

Line No.	OM&A Project Category	2013 Actual	2014 Actual	2015 Actual	2016 Budget	2017 Plan	2018 Plan	2019 Plan	2020 Plan	2021 Plan
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1	<b>Regulatory</b>	23.6	17.0	15.2	11.9	9.8	7.7	3.1	0.0	0.0
2	<b>Sustaining</b>	63.7	63.8	85.5	77.9	75.4	66.7	41.5	33.7	29.0
3	<b>Value Enhancing/Strategic</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	<b>Total</b>	87.4	80.8	100.7	89.9	85.3	74.4	44.5	33.7	29.0