

DARLINGTON REFURBISHMENT PROGRAM - OM&A

1.0 PURPOSE

This section identifies the OM&A costs associated with the Darlington Refurbishment Program (“DRP”).

2.0 OVERVIEW

The DRP is primarily a capital project but includes Project OM&A expenses for removal costs and volumetric low & intermediate level waste (“L&ILW”) variable expenses related to disposal costs.¹ A summary of DRP OM&A expenses is provided in Ex. F2-7-1, Table 1, for 2020-2026, after which the DRP is expected to be completed.

3.0 TERM-OVER-TERM CHANGES – IR TERM

2027-2031 Plan versus 2022-2026 Actuals and Budget

As this Application includes no forecast OM&A expense for the DRP during the 2027-2031 IR term, there is no term-over-term analysis to conduct.

4.0 PERIOD-OVER-PERIOD CHANGES

Between EB-2016-0152 and EB-2020-0290, the OEB approved DRP OM&A expenditures of \$48.4M for 2020, \$19.7M for 2021, \$24.2M for 2022, \$23.6M for 2023, \$29.3M for 2024, \$25.0M for 2025, and \$8.4M for 2026. Actual costs were \$19.0M for 2020, \$35.6M for 2021, \$22.3M for 2022, \$39.0M for 2023, and \$59.7M for 2024. OPG has forecasted \$10.5M for 2025 and \$1.8M for 2026. A comparison of actual vs. OEB-approved DRP OM&A expenses is provided in Ex. F2-7-1, Table 2.

Across the 2020-2026 period, DRP OM&A costs are above OEB-approved by (+\$9.3M) and managed within the OEB-approved \$12.8B program budget. As discussed in Ex. D2-2-1, OPG is currently forecasting the final cost of the DRP to be \$12.7B. Overall, the OM&A cost variance is primarily due to higher L&ILW variable expenses of (+\$13.5M) as a result of higher cost rates

¹ These costs are also reflected in Ex. C2-1-1, Table 2, Line 3.

1 reflecting the 2022 ONFA Reference Plan (see Ex. C2-1-1), Turbine Generator Execution
2 project (“TG Execution Project”) write-off of (+\$8.8M), and Steam Generator strainer project
3 (“Strainer Project”) write-off of (+\$6.4M). These amounts are partially offset by lower removal
4 costs of (-\$19.2M) mainly driven by lower Fuel Handling activities.

5
6 The TG Execution Project write-off resulted from a decision to change the Units 3 and 4 stator
7 scope from a stator swap to an in-situ rewind. By shifting from stator swap to in-situ rewind,
8 OPG mitigated risks that could have arisen as a result of such swaps being completed
9 infrequently in the industry. The stator lift required for the swap would have represented the
10 heaviest and most complex lift since DRP construction began, requiring both cranes in the
11 turbine hall at 99.9% capacity. As discussed in EB-2020-0290, this lift carries significant risks,
12 including operational experience in the industry for safety issues.²

13
14 The Strainer Project write-off resulted from OPG’s decision not to continue the project, which
15 had the primary purpose of excluding foreign material during unit startup to prevent damage
16 to the primary heat transport system. OPG successfully implemented an alternative program
17 to mitigate this risk as described in EB-2020-0290, Ex. F2-7-1.

18 19 **5.0 PERIOD-OVER-PERIOD CHANGES – BRIDGE YEARS**

20 **2026 Budget versus 2026 OEB-Approved**

21 The forecasted OM&A cost variance for 2026 of (-\$6.6M) (Ex. F2-7-1, Table 2) is primarily due
22 to OPG no longer removing the Retube Waste Processing Building after completion of DRP.
23 The building is being repurposed for ongoing use by Advanced Inspection Maintenance and
24 Fuel Handling teams in support of station operations.

25 26 **2025 Budget versus 2025 OEB-Approved**

27 The forecasted OM&A cost variance for 2025 of (-\$14.5M) (Ex. F2-7-1, Table 2) is primarily
28 due to the Unit 4 RFR removal schedule advancement as discussed below.

² See EB-2020-0290, Tr. Tech. Conf., May 3, 2021, p. 19, lines 11-19.

1 **6.0 PERIOD-OVER-PERIOD CHANGES – HISTORICAL YEARS**

2 **2024 Actual versus 2024 OEB-Approved**

3 The OM&A cost variance for 2024 of (+\$30.4M) (Ex. F2-7-1, Table 2) is primarily due to higher
4 RFR removal costs for Unit 4 (+\$20.4M) due to schedule advancement from early return to
5 service of Unit 1 and higher L&ILW variable expenses (+\$9.7M) due to higher cost rates
6 reflecting the 2022 ONFA Reference Plan (see Ex. C2-1-1), partially offset by waste volume
7 optimization.

8

9 **2023 Actual versus 2023 OEB-Approved**

10 The OM&A cost variance for 2023 of (+\$15.4M) (Ex. F2-7-1, Table 2) is primarily due to higher
11 RFR removal costs related to Units 3 and 1 (+\$15.0M) largely due to the schedule shift.

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13 **2022 Actual versus 2022 OEB-Approved**

14 The OM&A cost variance for 2022 of (-\$1.9M) (Ex. F2-7-1, Table 2) is primarily due to lower
15 Unit 1 Turbine Generator removal costs (-\$1.1M) which was previously planned in EB-2020-
16 0290 for 2022 but occurred in 2023.

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18 **2021 Actual versus 2021 OEB-Approved**

19 The OM&A cost variance for 2021 of (+\$15.8M) (Ex. F2-7-1, Table 2) is primarily due to higher
20 RFR removal costs related to Unit 3 (+\$25.5M) largely due to the schedule shift as a result of
21 delays due to the COVID-19 pandemic, partially offset by the timing of forecasted Unit 1 RFR
22 removal costs (-\$9.1M) which was previously planned in EB-2016-0152 to start in 2021 but
23 actually started in 2022.

24

25 **2020 Actual versus 2020 OEB-Approved**

26 The OM&A cost variance for 2020 of (-\$29.4M) (Ex. F2-7-1, Table 2) is primarily due to the
27 Unit 3 schedule shift deferring RFR removal costs (-\$29.0M), which was previously planned in
28 EB-2016-0152 for 2020 but actually occurred in 2021 due to the COVID-19 pandemic, and
29 lower Fuel Handling removal activities (-\$11.0M) due to Power Track change of project scope.
30 These variances are partially offset by the write-offs to the TG Execution Project (+\$8.8M) and
31 Strainer Project (+\$6.4M) as discussed above.

Numbers may not add due to rounding.

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 EB-2025-0297
 Exhibit F2
 Tab 7
 Schedule 1
 Table 1

Table 1
 OM&A - Darlington Refurbishment Program (\$M)

Line No.	Description	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Actual	2025 Budget	2026 Budget	2027 Budget	2028 Budget	2029 Budget	2030 Budget	2031 Budget
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
1	Darlington Refurbishment Program - Unit Refurbishment ¹	19.0	35.6	22.3	39.0	59.7	10.5	1.8	0.0	0.0	0.0	0.0	0.0
2	Facilities and Infrastructure Projects	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Safety Improvement Opportunities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Total Darlington Refurbishment Program OM&A	19.0	35.6	22.3	39.0	59.7	10.5	1.8	0.0	0.0	0.0	0.0	0.0

Notes:

- The Unit Refurbishment 2021-2026 amounts include removal costs of existing structures or facilities, and L&ILW variable expense. L&ILW expenses are shown below:

Darlington Refurbishment Program Cost	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Actual	2025 Budget	2026 Budget	2027 Budget	2028 Budget	2029 Budget	2030 Budget	2031 Budget
L&ILW variable expenses	1.4	6.4	6.1	7.9	18.0	6.1	1.8	0.0	0.0	0.0	0.0	0.0

Numbers may not add due to rounding.

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Table 2
 Comparison of OM&A - Darlington Refurbishment Program (\$M)

Line No.	Business Unit	2020 OEB Approved	(c)-(a) Change	2020 Actual	(g)-(c) Change	2021 OEB Approved	(g)-(e) Change	2021 Actual	(k)-(g) Change	2022 OEB Approved	(k)-(i) Change	2022 Actual
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	Darlington Refurbishment Program - Unit Refurbishment ¹	48.4	(29.4)	19.0	16.6	19.7	15.8	35.6	(13.2)	24.2	(1.9)	22.3
2	Facilities and Infrastructure Projects	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Safety Improvement Opportunities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Total Darlington Refurbishment Program OM&A	48.4	(29.4)	19.0	16.6	19.7	15.8	35.6	(13.2)	24.2	(1.9)	22.3

Line No.	Business Unit	2022 Actual	(e)-(a) Change	2023 OEB Approved	(e)-(c) Change	2023 Actual	(i)-(e) Change	2024 OEB Approved	(i)-(g) Change	2024 Actual	(k)-(i) Change	2025 Plan
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
5	Darlington Refurbishment Program - Unit Refurbishment ¹	22.3	16.6	23.6	15.4	39.0	20.7	29.3	30.4	59.7	(49.2)	10.5
6	Facilities and Infrastructure Projects	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Safety Improvement Opportunities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Total Darlington Refurbishment Program OM&A	22.3	16.6	23.6	15.4	39.0	20.7	29.3	30.4	59.7	(49.2)	10.5

Line No.	Business Unit	2025 OEB Approved	(c)-(a) Change	2025 Plan	(g)-(c) Change	2026 OEB Approved	(g)-(e) Change	2026 Plan
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
9	Darlington Refurbishment Program - Unit Refurbishment ¹	25.0	(14.5)	10.5	(8.7)	8.4	(6.6)	1.8
10	Facilities and Infrastructure Projects	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Safety Improvement Opportunities	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Total Darlington Refurbishment Program OM&A	25.0	(14.5)	10.5	(8.7)	8.4	(6.6)	1.8

Notes:

1 The Unit Refurbishment 2020-2026 amounts include removal costs of existing structures or facilities prior to construction modification, and L&ILW variable expense. Breakdown provided in F2-7-1 Table 1.