BASE OM&A – NUCLEAR OPERATIONS

1.0 PURPOSE

This evidence presents nuclear base OM&A expense for the historical period, bridge year, and IR term (excluding OM&A expense for Darlington Refurbishment).

2.0 OVERVIEW

The nuclear base OM&A expense for 2020-2026 is provided in Ex. F2-2-1, Table 1. OPG is requesting approval of base OM&A expense of $1,322.7M in 2022, $1,313.3M in 2023, $1,298.2M in 2024, $1,069.5M in 2025, and $616.3M in 2026. The forecast decrease over the IR term is 56%.

In addition to the cessation of direct Pickering station OM&A upon the station's planned shutdown, the decrease in nuclear base OM&A over the IR term reflects the targets that OPG has set within Operations and Project Support functions and Corporate Support functions to manage the transition to a four-unit fleet and mitigate the impact of the diseconomies of scale from the reallocation of support costs to remaining operations (Ex. A2-2-1). The decrease is partially offset by labour and other cost escalation.

OPG's targets for both the station and support organizations demonstrate a continuing focus on workforce planning and resourcing, cost discipline and work reduction or elimination through re-prioritizing and streamlining of work. OPG continues to implement various fleet-wide and site initiatives for its nuclear business aimed at sustainably reducing costs as part of a focus on continuous improvement (Ex. F2-1-1, Section 3.4). Additional initiatives will be developed over the IR term to achieve the targeted cost structure.

In line with its goal of preparing the workforce for the Pickering shutdown, OPG's staff resource plan forecasts a decrease in Nuclear Operations OM&A funded regular staff (full-time equivalents ("FTEs")) over the IR term (Ex. F2-1-1, Table 2). To effectively manage the transition, OPG expects a slight increase in headcount in 2020, mainly comprised of non-

regular labour FTEs partially offset by a decline in regular labour. Non-regular labour[1] FTEs will address operational needs in support of the Pickering optimized shutdown sequence, taking into account training time requirements and anticipated attrition over the remaining life of the station. Thereafter, over the period 2021 to 2025, OPG expects labour (regular and non-regular) to decline. The headcount forecast results in a declining trend in total staffing costs (regular and non-regular) from 2020 to 2025, by an average of 4.6% per year (Ex. F2-2-1, Table 2).

A discussion of workforce planning and resourcing is provided in Ex. F4-3-1 and in Section 3.2 below.

3.0 BASE OM&A BACKGROUND

Base OM&A provides the main source of funding for operating and maintaining the nuclear stations in support of:

- the safe operation of the plants;
- the ongoing production of electricity from the operating nuclear units;
- improving the reliability of the nuclear assets; and
- ensuring compliance with applicable legislation and nuclear regulatory requirements.

3.1 Base OM&A Description by Function and Resource Type

Base OM&A cost information for 2022 through 2026 is presented by Nuclear Station and Operations and Project Support in Ex. F2-2-1, Table 1. The Nuclear Station and Operations and Project Support functions are described in Attachment 1 to this exhibit. In addition, Ex. F2-2-1, Table 1 breaks out the Capacity Refurbishment Variance Account ("CRVA") eligible base OM&A costs for Fuel Channel Life Extension Ongoing (Consequential),[2]

[1] Non-regular staff consist of PWU Term Employees ("Term"), Society Extended Temporary Employees ("ETE"), and other employees hired for a fixed period of time with a start and end date (see Ex. F4-3-1).
[2] Fuel Channel Life Extension Ongoing (Consequential) primarily include costs for pressure tube and spacer surveillance, fuel channel inspection and maintenance, spacer material and ex-service spacer irradiation in High Flux Isotope Reactor, and burst tests to improve fracture toughness models (Ex. F2-3-3, Attachment 1, Tab 1).

Pickering Extended Operations Enabling Costs (Ex. F2-3-1) and Pickering Optimized Shutdown Enabling Costs (Ex. F2-1-1).[3]

Details of station base OM&A costs by function and the allocation of Operations and Project Support costs between Pickering and Darlington, for 2022-2026, are provided in Ex. F2-2-1, Tables 9 through 13. These tables show that the majority of station base OM&A costs during the IR term are in the Operations and Maintenance functions, reflecting the significance of these core activities to ongoing station performance. As shown in Ex. F2-2-1, Table 1, within Operations and Project Support, the largest cost is in Enterprise Engineering, primarily for ensuring plant safety and reliability.

In addition to the operational functions described in Attachment 1, nuclear base OM&A also funds the following:

- The cost of staffing resources supporting the execution of planned outages, with the exception of Inspection and Reactor Innovation ("IRI"). The cost of IRI staff involved in the execution of planned outages is charged directly to outage OM&A.
- All costs for forced outages, planned derates and forced derates. Forced outages, in particular, can require significant effort and materials to address the cause of the outage and return a unit to operation. As forced outages are unplanned events for which no budget is provided, other base OM&A work must be deferred to accommodate them (see Ex. F2-4-1 for further details on outage costing).
- Inventory obsolescence provisions.

Base OM&A cost information is presented by standard OPG resource types in Ex. F2-2-1, Table 2, which indicates that OPG labour (regular and non-regular) is the most significant contributor to base OM&A costs, representing approximately 67%.

The resource types are as follows:

[3] See Ex. H1-1-1 for discussion of the CRVA.

1. **Labour:** The salary and benefits cost of OPG full-time regular staff consisting of management, Society of United Professionals ("Society") and Power Workers' Union ("PWU") employees. Base OM&A labour costs are derived using standard labour rates for job families within Nuclear. In addition to base salary and statutory benefits (e.g., Employment Insurance ("EI"), Canada Pension Plan ("CPP")), these standard labour rates include a component for pension and other post employment benefits earned by employees for current service (discussed in Ex. F4-3-2) as well as a component for current employee health, dental and other benefits provided during employment.
2. **Non-Regular Labour**: The salary and any applicable benefits cost of OPG non-regular staff consisting of PWU Term, Society Extended Temporary Employee ("ETE"), and other employees hired for a fixed period of time with a start and end date. As discussed at Ex. F4-3-1, OPG has taken steps, through collective agreement provisions, to establish alternative workforce categories to permit greater workforce planning and flexibility with a focus on minimizing the impact of the planned Pickering shutdown through the use of non-regular labour. Through collective bargaining, non-regular staff has been expanded to include PWU Term and Society ETE.
3. **Overtime:** The cost of incremental pay for work outside of core hours, for example during forced outages or urgent repairs.
4. **Augmented Staff:** Costs for external personnel providing specialized expertise (e.g., engineering) to supplement internal capability and/or to fill temporary vacancies.
5. **Materials:** The costs of all consumables, replacement parts, and associated transportation service costs supporting station operations (e.g., ongoing maintenance and repair work).
6. **License Fees:** The cost of licensing-related fees primarily paid to the Canadian Nuclear Safety Commission ("CNSC").
7. **Other Purchased Services:** The costs of specialized external services, including construction and maintenance services, laundry services, and specialized technical services (e.g., nuclear safety analysis, research and development, and specialized testing services). A discussion of the trend in Other Purchased Services over the period 2020 to 2026 is provided below.

8. **Other:** Costs for miscellaneous items such as variable low and intermediate level waste expenses, travel, and inventory obsolescence provision.

As discussed above, with the need to cost effectively manage staffing resources for planned Pickering shutdown by the end of 2025, OPG is increasingly relying on the use of non-regular labour for base OM&A work, within collective agreement provisions. A breakout of total Nuclear FTEs has been provided in Ex. F2-1-1, Table 2, which separately identifies FTEs funded by OM&A, capital, refurbishment , nuclear non energy direct and provision.[4,5]

As a general matter, in order to operate the nuclear facilities safely, reliably and efficiently, OPG uses incremental short-term labour resources, including overtime, non-regular labour, augmented staff and Other Purchased Services, as appropriate. Three primary factors have traditionally driven the use of incremental short-term labour resources in Nuclear: 1) to meet peak work requirements, 2) to maintain coverage for key staff positions in accordance with licensing requirements, and 3) to complete priority work impacted by short term or unexpected staff shortages due to factors such as temporary vacancies, maternity leaves or vacations. The selection of which incremental labour resource to employ is an ongoing resource optimization and balancing process and depends on the specific circumstances driving the need for incremental resources. For example, OPG uses base OM&A overtime to maintain coverage of key positions (e.g., authorized nuclear operators) and provide backup for these staff, if absent, so as to maintain minimum staff complement on each shift.

The need for short term resources, including Other Purchased Services, is expected to increase over the period 2020 to 2024 before declining (Ex. F2-2-1, Table 2). The increase in planned Other Purchased Services is driven primarily by the need to manage temporary shortages in specialized technical skills while staff are working on the Darlington

[4] Ex. F2-1-1 Table 2 shows total Nuclear OM&A FTEs, which includes FTEs funded by base, outage and project OM&A. The decrease in need for Nuclear OM&A Temporary FTEs in 2022 compared to 2021 is driven by the number of outages as there are no regular planned outages at Darlington in 2022 compared to two regular planned outages in 2021 as discussed in Ex. E2-1-2.

[5] "Provision" refers to OPG's accrued liabilities for nuclear decommissioning and waste management (Ex. C2-1-1).

Refurbishment Program, anticipated increases in regulatory requirements for both stations following Darlington post-refurbishment and leading up to Pickering planned shutdown, increased training of temporary resources, emergency preparedness activities, and resources necessary to enable Pickering Optimized Shutdown and Fuel Channel Life Extension.

3.2 Major Objectives and Focus Areas

The 2020-2026 Business Plan identifies specific objectives, focus areas and cost targets for driving the productivity and efficiency improvements needed to realize sustainable savings and to align OPG's cost structure with post-Pickering revenue and performance targets. These improvements will position Darlington's move toward top quartile performance post-refurbishment, while ensuring continued safe and reliable operations (Ex. A2-2-1).

In order to meet the established OM&A cost targets, fleet wide initiatives have been implemented for the nuclear business (including Right Work, Right Time, Right Value, Leaders Driving Business Results, and People Powering the Future), as discussed in Ex. F2-1-1, Section 3.4.2.1. These initiatives are designed to help achieve the business plan target cost commitments (Ex. F2-1-1, Section 3.3) and will be largely executed by base OM&A resources. Base OM&A resources will also be employed for inspection and maintenance and project support to address life cycle aging of equipment at Darlington to ensure safe and reliable operation before, during, and after refurbishment, and will provide similar support at Pickering to operate until 2024/2025.

A major focus area for Nuclear during the IR term will be workforce planning and resourcing. OPG workforce planning and resourcing seeks to sustainably minimize staffing by leveraging reductions through attrition, continuing with vacancy controls, and implementing targeted staffing plans in anticipation of Pickering shutdown at the end of 2025. As described in Ex. F2-1-1, Attachment 1, the workforce planning and resourcing initiative, which began in 2017, has since been incorporated into the People Powering the Future initiative (Ex. F2-1-1, Section 3.4.2.1). This initiative seeks to ensure an adequate number of qualified employees are available to complete the Darlington Refurbishment Program, the continued safe

operation of Darlington and the safe operation and closure of Pickering, while minimizing external regular hiring and facilitating the transfer of qualified regular Pickering employees (within the terms of collective agreements).

3.3 Base OM&A Trends

Base OM&A is forecast to increase year over year by +0.9% in 2022, before beginning to decline by -0.7% in 2023, -1.1% in 2024, -17.6% in 2025, and -42.3% in 2026 in conjunction with the planned shutdown of Pickering. In addition to the cessation of direct Pickering station OM&A upon shutdown, this reflects OPG's targeted cost structure to mitigate the impact of the diseconomies of scale from the reallocation of Operations and Project Support and Corporate Support costs to remaining operations (see Ex. A2-2-1, Section 5).

An explanation of period-over-period variances in base OM&A is provided in Ex. F2-2-2.

ATTACHMENTS

Attachment 1: Nuclear Operations Function Descriptions