Board Staff Interrogatory #208

Interrogatory

Reference:
Exhibit F2 / Tab 1 / Schedule 1 / Attachment 1 / p. 1

Preamble:

OPG provided an update on six fleet wide initiatives identified in its 2017-2021 Payment Amounts Proceeding. These initiatives include: (a) Parts Improvement; (b) Outage Improvement; (c) Equipment Reliability; (d) Human Performance; (e) Nuclear Inventory; and (f) Workforce Planning and Resourcing.

Question(s):

a) Please provide an estimate of the cost savings or increased production resulting from each initiative.

b) Please detail how these cost savings or increased production have been reflected in the revenue requirement or nuclear production forecast for the 2022-2026 Custom IR term.

Response

a) A full description of the six fleet wide nuclear initiatives identified in EB-2016-0152 and benefits realized is provided in Ex. F2-1-1, Attachment 1. The following is a summary of the benefits realized and the cost savings or increased production for each initiative where it is available, or an explanation for why OPG is unable to isolate the impact of these initiatives from other factors contributing to performance:

- Parts Improvement Initiative: This initiative resulted in a 17 percentage point increase in the performance of critical work orders that survived the outage planning period and were successfully completed from scope freeze to execution over the 2013 to 2020 period. This improvement allows more approved work orders to be completed in a timely manner, which contributes to strengthened equipment reliability and a favourable impact on the stations' Forced Loss Rate ("FLR"). OPG is unable to isolate the specific contribution of the Parts Improvement Initiative on reducing FLR or the corresponding favourable impact on production since there are a number of other factors that contribute to FLR and production performance, including equipment condition. Pickering's FLR improved from 10.7% in 2014 to

1.6% in 2019, averaging 5.0% from 2014 to 2019, and Darlington's FLR has averaged 2.7% from 2014 to 2019.

- Outage Improvement Initiative: This initiative resulted in efficiencies and improvements in outage planning and execution, which contributed to the reduction of planned outage days at both Pickering and Darlington over 2017 to 2019. OPG's response to Ex. L-E2-01-Staff-181 identifies savings related to certain outage improvements. Further details are set out in Ex. E2-1-1.

- Equipment Reliability Initiative: This initiative resulted in improvements in the Equipment Reliability Index ("ERI"), an industry benchmark. In 2015, Pickering and Darlington had ERI scores of 69 and 76 respectively. In 2019, Pickering and Darlington achieved their best ever ERI scores of 94 at Pickering (versus target of 86) and 95 at Darlington (versus target of 92). See Parts Improvement Initiative above for FLR performance over the 2014 to 2019 period. OPG is unable to separate the Equipment Reliability Initiative's impact on FLR or the corresponding favourable impact on production for the same reason provided for the Parts Improvement Initiative above.

- Human Performance Initiative: This initiative contributed to a favourable trend in the Human Performance Error Rate at Pickering and Darlington over the 2014 to 2019 period. Improving Human Performance can reduce lost generation due to events triggered by human error and OPG has quantified savings associated with improved Human Performance. In 2015, approximately 1.1 TWh (about $65M[1]) in lost generation at both Pickering and Darlington combined were attributed to Human Performance issues that resulted in outage delays and extensions and work management inefficiencies. At the end of 2020, less than 0.1 TWh (about $7M) in lost generation at Pickering and Darlington combined was attributed to Human Performance events.

- Nuclear Inventory Initiative: This initiative contributed to a material and supply inventory growth rate that was at or below (i.e., better than) target in 2018 and 2019 at Pickering. Darlington's growth rate was impacted by various factors, as described in Ex. F2-1-1, Attachment 1, p. 13. A reduction in the growth of inventory reduces the potential need for additional OM&A expenses, including obsolescence provision, warehousing requirements and related carrying costs. A number of factors contribute to inventory-related costs, including inventory needs driven by equipment requirements, remaining life of the plants and other operational factors, as well as obsolescence management. As a result, OPG is unable to quantify cost savings attributed specifically to the Nuclear Inventory Initiative.

[1] In the course of preparing this interrogatory response it was determined that the amount of $44M shown in Ex. F2-1-1, Attachment 1, p. 10 was incorrect. The correct amount is $65M.

- The Workforce Planning and Resourcing Initiative: This initiative developed and implemented a resource strategy in order to support the safe operation of the plants during the Darlington Refurbishment Program, as well as planning for the shutdown of Pickering. A measure of the success of the initiative can be seen in the results from the Goodnight 2019 Nuclear Staffing Benchmarking study (see Ex. F2-1-1, Attachment 6). Goodnight benchmarked OPG Nuclear staffing to other North American nuclear operators and established that OPG is 239 Full-Time Equivalents ("FTEs") (4.5%) below the North American FTE benchmark of 5,255 FTEs, a consistent improvement since 2011 (see Ex. F2-1-1, Section 3.2.1.3 for further details). OPG is unable to separate the impact that the Workforce Planning and Resourcing Initiative had on OPG's favourable comparison to benchmark in the Goodnight study since there are a number of other factors that contributed to this performance, including operational considerations, attrition rates and changes to the benchmark.

b) OPG is unable to attribute these initiatives to specific revenue requirement or nuclear production forecast impacts for the Custom IR term in light of the other factors that impact performance as set out in part a). Additionally, elements of these initiatives have provided a foundation for current initiatives discussed in Ex. F2-1-1, which will further benefit achievement of OPG's performance targets over the 2022-2026 Custom IR term. See also Ex. L-E2-01-VECC-022.