Board Staff Interrogatory #191

Interrogatory

Reference:
Exhibit E2 / Tab 1 / Schedule 1 / p. 12

Question(s):

a) Please provide a tabular summary of trends in production losses per forced outage between 2016 and 2020 and comment on how these trends compare to OPG's forecasts to 2026. Please discuss whether production losses per forced outage are expected to increase, decrease or remain approximately the same and explain why.

Response

Refer to Chart 1 below.

Chart 1 - OPG Forced Outage Trends 2016 - 2020

Year	Station	Forced Outage Days	GWh Lost	# Forced Outages	GWh lost / forced outage
2016	DN	17.5	368.8	6	61.5
	PN	27.6	341.5	6	56.9
	Total	45.1	710.2	12	59.2
2017	DN	13.0	273.9	5	54.8
	PN	57.1	706.4	8	88.3
	Total	70.1	980.4	13	75.4
2018	DN	6.7	141.2	3	47.1
	PN	69.1	854.7	9	95.0
	Total	75.8	995.8	12	83.0
2019	DN	44.0	927.2	3	309.1
	PN	12.5	154.7	3	51.6
	Total	56.5	1081.8	6	180.3
2020	DN	2.0	42.1	1	42.1
	PN	25.0	308.7	4	77.2
	Total	27.0	350.8	5	70.2
Yearly Average	DN	16.6	350.6	3.6	97.4
	PN	38.2	473.2	6.0	78.9
	Total	**54.9**	**823.8**	**9.6**	**85.8**

OPG does not forecast the number of forced outages each year or the duration of these outages, hence, a similar chart to Chart 1 is not available or possible for 2021-2026. Rather, OPG forecasts the forced loss rate and forced loss rate days equivalent of lost generation each year as shown in Ex. E2-1-2, Table 1a and 1b, and described in Ex. E2-1-1, pp. 12-14, and Ex. L-E2-01-Energy Probe-051.

Chart 2 and Chart 3 below can be used to compare trends in FLR days equivalent. FLR days equivalent capture all sources of unplanned production losses, rather than just the forced outages requested.

Chart 2 - OPG FLR Days Equivalent Trends 2016 - 2020

Year	Station	FLR Days Equivalent	TWh Lost
2016	DN	29.8	0.6
	PN	70.2	0.9
	Total	100.0	1.5
2017	DN	16.4	0.3
	PN	95.7	1.2
	Total	112.1	1.5
2018	DN	11.0	0.2
	PN	97.2	1.2
	Total	108.2	1.4
2019	DN	48.3	1.0
	PN	31.1	0.4
	Total	79.4	1.4
2020	DN	17.7	0.4
	PN	45.6	0.6
	Total	63.3	0.9
Yearly Average	DN	24.6	0.5
	PN	68.0	0.8
	Total	**92.6**	**1.4**

Chart 3 - OPG FLR Days Equivalent Trends 2021 - 2026[1]

Year	Station	FLR Days Equivalent	TWh Lost
2021	DN	32.8	0.7
	PN	63.9	0.8
	Total	96.7	1.5
2022	DN	14.4	0.3
	PN	58.9	0.7
	Total	73.3	1.0
2023	DN	5.9	0.1
	PN	63.1	0.8
	Total	69.0	0.9
2024	DN	38.0	0.8
	PN	66.8	0.8
	Total	104.8	1.6
2025	DN	46.2	1.0
	PN	49.4	0.6
	Total	95.6	1.6
2026	DN	46.8	1.0
	PN	0.0	0.0
	Total	46.8	1.0
Yearly Average	DN	30.7	0.6
	PN	60.4	0.7
	Total	**91.1**	**1.3**

[1]Budget 2021, Plan 2022-2026

Overall, the number of FLR equivalent days and associated generation losses will remain approximately the same in the forecast.

At Darlington, there will be less operating units contributing to FLR days equivalent as units enter their refurbishments. This is offset by units returning from refurbishment that are forecast at much higher FLR for three years, as described in Ex. E2-1-1, pp. 13-14.

At Pickering, the target FLR for 2021-2025 is better than the yearly average from 2016-2020, contributing to a reduction in FLR equivalent days. This is offset by more operating time, and thus more FLR equivalent days, as the units approach their end of

commercial operations. There are no regular cyclical outages planned in the final year of operation for each unit.