

1 Q. **Project C-33: Upgrade Circuit Breakers – Various Sites**

2 With respect to Section 3.2 - “Operating Performance”, Hydro’s Application at page
3 11 of the Report at Tab 8, Volume II, states:

4 “As the above table demonstrates, Hydro’s break performance exceeds CEA
5 performance generally. The above data would therefore suggest that
6 Hydro’s current long-term refurbishment/replacement plans remain in
7 place.”

8 Please provide further information with respect to the cost of the implementation
9 of the upgrades of circuit breakers as extended to the year 2031.

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12 A. A condensed summary of the work proposed under the “Upgrade Circuit Breakers”
13 project is provided for the purpose of comparison:

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Year	Replacements	Quantity	Overhauls	Quantity
2016	230 kV	4	230 kV	1
	138 kV	0	138 kV	4
	66/69 kV	1	66/69 kV	0
2017	230 kV	9	230 kV	0
	138 kV	1	138 kV	4
	66/69 kV	2	66/69 kV	0
2018	230 kV	8	230 kV	0
	138 kV	6	138 kV	4
	66/69 kV	2	66/69 kV	0
2019	230 kV	8	230 kV	1
	138 kV	3	138 kV	1
	66/69 kV	3	66/69 kV	0
2020	230 kV	7	230 kV	0
	138 kV	4	138 kV	0
	66/69 kV	1	66/69 kV	0
TOTAL:		59	TOTAL:	15

1 A condensed summary of similar work tentatively scheduled for the years 2021 to
 2 2031 is provided here:

3

Year	Replacements	Quantity	Overhauls	Quantity
2021	230 kV	3	230 kV	0
	138 kV	1	138 kV	0
	66/69 kV	2	66/69 kV	0
2022	230 kV	0	230 kV	1
	138 kV	3	138 kV	0
	66/69 kV	3	66/69 kV	0
2023	230 kV	0	230 kV	0
	138 kV	3	138 kV	1
	66/69 kV	2	66/69 kV	0
2024	230 kV	4	230 kV	0
	138 kV	1	138 kV	0
	66/69 kV	0	66/69 kV	0
2025	230 kV	3	230 kV	0
	138 kV	1	138 kV	0
	66/69 kV	0	66/69 kV	0
2026	230 kV	1	230 kV	0
	138 kV	0	138 kV	0
	66/69 kV	0	66/69 kV	0
2027	230 kV	0	230 kV	0
	138 kV	0	138 kV	0
	66/69 kV	0	66/69 kV	0
2028	230 kV	0	230 kV	0
	138 kV	0	138 kV	0
	66/69 kV	1	66/69 kV	0
2029	230 kV	0	230 kV	0
	138 kV	4	138 kV	0
	66/69 kV	0	66/69 kV	0
2030	230 kV	4	230 kV	4
	138 kV	0	138 kV	2
	66/69 kV	0	66/69 kV	0
2031	230 kV	3	230 kV	2
	138 kV	0	138 kV	0
	66/69 kV	0	66/69 kV	0
	TOTAL:	39	TOTAL:	10

1 Using the present day estimates, the projection of costs for the work identified
2 between the years 2021 and 2031 is approximately \$52,000,000 in nominal dollars.
3 This is in addition to the work included in this project for the years 2016 to 2020,
4 estimated at \$61,460,400. Hydro notes the estimates for the years 2021 to 2031
5 uses the current budget to estimate future costs. As a projection, the pace and
6 scope of work currently identified for breaker replacements and overhauls is
7 subject to change over time.

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9 A detailed estimate will be developed as part of the regular capital budget
10 submission at the appropriate time.