

1 **Q. References: CBA, v. 1, page A8**

2 a) Please provide a list of all Terminal Station works planned for the Labrador
3 Interconnected System for the years 2019 through 2023, inclusive, and for each
4 one, indicate the cost and the reason the works are needed.

5
6 A. (a) 2019 activities resulting from 2018 multi-year terminal station projects approved
7 in the *2018 Capital Budget Application*, as well as single-year or multi-year terminal
8 station projects proposed in this Application for the Labrador Interconnected
9 System are tabulated below in Tables 1 and 2, respectively. Projects approved prior
10 to the *2018 Capital Budget Application* for the Labrador Interconnected System are
11 included in Table 3.

12
13 For justifications for projects proposed in the *2018 Capital Budget Application*
14 (Table 1), please refer to the “Terminal Station Refurbishment and Modernization
15 Proposal” and “Terminal Station Asset Management Overview”, both located in
16 Volume II, Tab 12 of the *2018 Capital Budget Application*. For 2019 project
17 justifications (Table 2), please refer to the “Terminal Station Refurbishment and
18 Modernization” proposal and “Terminal Station Asset Management Overview”,
19 both located in Volume II, Tab 6 of this Application.

20
21 Please refer to Hydro’s response to LAB-NLH-001 regarding the availability of
22 justification and finalized project estimates for projects in the “2019-2023 Capital
23 Plan” that are not yet before the Board.

Table 1: Multi-Year Activities Approved in 2018 Capital Budget Application

Activity	Station	Total Estimated Direct¹ Cost (\$000s)	2018-2019 TS Refurbishment and Modernization Section Reference	TS Asset Management Overview Revision 1 Section Reference
Replace PT1 PT AØ-BØ and PT1 PT BØ-CØ	Happy Valley	48.8	2.1.1, page 2	4.1.1, page 9
Replace Transformer Bushings – T2 HV, LV, and replace oil	Happy Valley	393.2	2.1.4, page 5	4.1.6, page 20
Replace Transformer Bushings – T5 HV, LV, N, T6 HV, LV, N and T12 HV, and replace oil	Wabush Terminal Station	1,351.5	2.1.4, page 5	4.1.6, page 20
Replace Insulators	Happy Valley	205.8	2.1.5, page 5	4.1.4, page 17
Replace Insulators	Wabush Terminal Station	209.6	2.1.5, page 5	4.1.4, page 17
Replace Insulators	Cooper Hill (Lab City)	55.0	2.1.5, page 5	4.1.4, page 17
Wabush Terminal Station Refurbishment	Wabush Terminal Station	4,208.4	2.4, page 9	Throughout

¹ Does not include indirect costs, which include contingency, interest, and escalation. Indirect costs average 27% of direct project costs, but may vary by individual activity.

Table 2: Activities Proposed in 2019 Capital Budget Application

Activity	Station	Total Estimated Direct Cost (\$000s)	2019-2020 TS Refurbishment and Modernization Section Reference	TS Asset Management Overview Version 3 Section Reference
Replace CTs 230-22 BØ & CØ, 230-23 CØ, 230-24 BØ, and combination CT/PT 230-24 AØ	Churchill Falls	379.0	2.1.1, page 2	4.1.1, page 6
Replace Disconnects B25B26 and 21B23	Churchill Falls	453.2	2.1.2, page 4	4.1.2, page 10
Refurbish T3 Oil	Wabush Substation	7.9	2.1.4, page 6	4.1.6, page 19
Refurbish T2 Tap Changer	Happy Valley	106.2	2.1.4, page 6	4.1.6, page 20
Replace T1 HV Bushings	Wabush Terminal Station	138.7	2.1.4, page 6	4.1.6, page 21
Replace T31S Bushings	Churchill Falls	147.8	2.1.4, page 6	4.1.6, page 21
Install Online DGA – T31	Churchill Falls	128.0	2.1.4, page 6	4.1.6, page 21
Install Online DGA – T11 and T12	Wabush Terminal Station	256.0	2.1.4, page 6	4.1.6, page 21
Replace Insulators	Wabush Terminal Station	33.8	2.1.5, page 8	4.1.4, page 14
Replace Insulators	Happy Valley	89.5	2.1.5, page 8	4.1.4, page 14
Replace Insulators	Churchill Falls	140.9	2.1.5, page 8	4.1.4, page 14

Activity	Station	Total Estimated Direct Cost (\$000s)	2019-2020 TS Refurbishment and Modernization Section Reference	TS Asset Management Overview Version 3 Section Reference
Wabush Terminal Station Refurbishment	Wabush Terminal Station	3,835.7	2.4, page 16; also refer to RFI LAB-NLH-011	Throughout
Additions for Load Growth	Wabush Substation	186.7	Addition for Load Growth – Distribution – Wabush Substation ² Reference Volume I, Tab E, Page E4	N/A

Table 3: Multi-Year Activities Approved Prior to 2018 Capital Budget Application

Activity	Station	Total Estimated Direct Cost (\$000s)	Capital Budget Application Reference
Upgrade Circuit Breakers – 230-2 and 230-4	Wabush Terminal Station	2,400.0	“Upgrade Circuit Breakers – Various Sites (2016-2020)” 2016 CBA, Volume II, Tab 8: Upgrade Circuit Breakers

² This is a standalone project and is not part of the “Terminal Station Refurbishment and Modernization” project.