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May 16, 2016

Board of Commissioners of Public Utilities Prince Charles Building 120 Torbay Road, P.O. Box 21040 St. John's, NL A1A 5B2

Attention:

Ms. Cheryl Blundon

Director of Corporate Services & Board Secretary

Dear Ms. Blundon:

Re:

An Application by Newfoundland and Labrador Hydro (Hydro) pursuant to Subsection 41(3) of the Act for the approval of the rerouting of Transmission line TL-227 and Distribution Line Sally's Cove L1.

Please find enclosed the original and 12 copies of the above-noted Application, plus supporting affidavit, project proposal, and draft order.

The proposed project involves the rerouting of Transmission line TL-227 and Distribution Line Sally's Cove L1 which is necessary for the supply of dependable and reliable power to the Island Interconnected System.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

Tracey Legal Counsel

TLP/bs

cc:

Gerard Hayes – Newfoundland Power Paul Coxworthy – Stewart McKelvey Stirling Scales Sheryl Nisenbaum – Praxair Canada Inc.

Thomas Johnson – Consumer Advocate Thomas J. O'Reilly, Q.C. – Cox & Palmer IN THE MATTER OF the Electrical Power Control Act, RSNL 1994, Chapter E-5.1 (the EPCA) and the Public Utilities Act, RSNL 1990, Chapter P-47 (the Act), and regulations thereunder;

AND IN THE MATTER OF an Application by Newfoundland and Labrador Hydro (Hydro) pursuant to Subsection 41(3) of the *Act*, for approval of the Rerouting of Transmission line TL-227 and Distribution Line Sally's Cove L1.

TO: The Board of Commissioners of Public Utilities (the Board)

THE APPLICATION OF NEWFOUNDLAND AND LABRADOR HYDRO (Hydro) STATES THAT:

- Hydro is a corporation continued and existing under the Hydro Corporation Act, 2007, is
 a public utility within the meaning of the Act and is subject to the provisions of the
 Electrical Power Control Act, 1994.
- Transmission line TL-259 (138kV), Transmission line TL-227 (69kV) and Distribution Line Sally's Cove L1 are located on the Northern Peninsula of Hydro's Island Interconnected System. All three lines cross a section of the Northern Peninsula which is prone to coastal erosion.
- 3. On January 28, 2016 an area of unstable coastal soil in the vicinity of Sally's Cove, to the west of Route 430, collapsed due to a landslide. TL 259, TL 227 and Sally's Cove L1, are routed within 10 meters of this area. Emergency rerouting of TL 259 was planned and executed days after the landslide. Engineering and environmental inspections indicate that TL 227 and Sally's Cover L1 are located in a high risk landslide area.
- A transmission line reroute is required to avoid potential structural failures given the high risk of additional landslides in the area and to ensure Hydro can continue to

provide safe, reliable electrical service to its customers. Potential structural failures can also create safety issues and hazards for Hydro personnel and for the general public.

- 5. Hydro is recommending that all transmission structures on TL 227 and Sally's Cove L1 currently located west of Route 430 be rerouted to the east side of the highway.
 Approximately 3 km of each line will be rerouted outside of the danger area to take advantage of more stable soil conditions, as similarly completed for TL 259. Details regarding Hydro's proposal to reroute the two lines are contained in the attached project proposal document.
- 6. The estimated cost of this project is \$2,250,000.
- 7. Hydro submits that the rerouting of TL 227 and Sally's Cover L1 is necessary to ensure that Hydro can continue to provide service which is safe and adequate and just and reasonable as required by Section 37 of the *Act*. An Engineering Report supporting this supplemental capital application is attached.
- 8. Hydro therefore makes Application for an Order pursuant to section 41(3) of the Act approving the rerouting of TL 227 and Sally's Cover L1 at an estimated capital cost of \$2,250,000 as set out in this Application and in the attached project description and justification document.

DATED at St. John's, in the Province of Newfoundland and Labrador, this ______day of May 2016.

Tracey Pennell
Council for the second second

Counsel for the Applicant

Newfoundland and Labrador Hydro 500 Columbus Drive P.O. Box 12400

St. John's, NL A1B 4K7

Telephone: (709) 778-6671 Facsimile: (709) 737-1782

1 2	(DRAFT ORDER) NEWFOUNDLAND AND LABRADOR
3	BOARD OF COMMISSIONERS OF PUBLIC UTILITIES
4 5	AN ORDER OF THE BOARD
6	AN ORDER OF THE BOARD
7	NO. P.U (2016)
8	(2010)
9	IN THE MATTER OF the Electrical Power
10	Control Act, RSNL 1994, Chapter E-5.1 (the
11	EPCA) and the Public Utilities Act, RSNL 1990,
12	Chapter P-47 (the Act), and regulations thereunder;
13	
14	AND IN THE MATTER OF an Application
15	by Newfoundland and Labrador Hydro (Hydro)
16	pursuant to Subsection 41(3) of the Act, for
17	approval of the Rerouting of Transmission line TL-227
18	and Distribution Line Sally's Cove L1.
19	WHITEDEACH A 1' - ' - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1
20	WHEREAS the Applicant is a corporation continued and existing under the <i>Hydro Corporation</i>
21	Act, 2007, is a public utility within the meaning of the Act and is subject to the provisions of the
22 23	Electrical Power Control Act, 1994; and
24	WHEREAS Section 41(3) of the Act requires that a public utility not proceed with the
25	construction, purchase or lease of improvements or additions to its property where:
26	a) the cost of construction or purchase is in excess of \$50,000; or
27	b) the cost of the lease is in excess of \$5,000 in a year of the lease,
28	-y
29	without prior approval of the Board; and
30	
31	WHEREAS in Order No. P.U. 33(2015) the Board approved Hydro's 2016 Capital Budget in
32	the amount of \$183,082,800; and
33	
34	WHEREAS on January 28, 2016 an area of unstable coastal soil in the vicinity of Sally's Cove,
35	to the west of Route 430, collapsed due to a landslide; and
36	WWWEDPLACE TO ACCUMENT AND ACCU
37	WHEREAS TL 227 and Sally's Cover L1 are located in a high risk landslide area; and
38	WHEDEAS on May 16 2016 Hydro applied to the Board for approved to remove Transmission
39 40	WHEREAS on May 16, 2016 Hydro applied to the Board for approval to reroute Transmission line TL-227 and Distribution Line Sally's Cove L1 to avoid potential structural failures given the
40	high risk of additional landslides in the area to unstable soil; and
42	ingh risk of additional fandshuces in the area to unstable soft, and
43	WHEREAS the capital cost of the project is anticipated to be \$2,250,000; and

1	WHE	REAS the Board is satisfied that rerouting of Transi	mission line TL-22/	and Distribution
2	Line S	Sally's Cove is necessary and reasonable to allow Hy	dro to provide servi	ce and facilities
3	which	are reasonably safe and adequate and just and reaso	nable.	
4	3			
5	IT IS	THEREFORE ORDERED THAT:		
6				
7	1.	The proposed capital expenditure to reroute Transi	mission line TL-227	and Distribution
8		Line Sally's Cove L1 of \$2,250,000 is approved.		
9				
10	2.	Hydro shall pay all expenses of the Board arising t	from this Application	1.
11				
12				
13	DATI	ED at St. John's, Newfoundland and Labrador, this	day of	, 2016.
14				
15			*	
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24 25				
25 26				
20				

IN THE MATTER OF the Electrical Power Control Act, RSNL 1994, Chapter E-5.1 (the EPCA) and the Public Utilities Act, RSNL 1990, Chapter P-47 (the Act), and regulations thereunder;

AND IN THE MATTER OF an Application by Newfoundland and Labrador Hydro (Hydro) pursuant to Subsection 41(3) of the *Act*, for approval of the Rerouting of Transmission line TL-227 and Distribution Line Sally's Cove L1.

AFFIDAVIT

I, Terry Gardiner, Professional Engineer, of St. John's in the Province of Newfoundland and Labrador, make oath and say as follows:

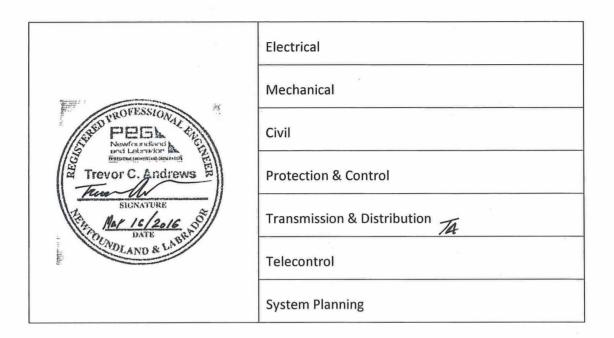
- I am the VP Transmission Operations of Newfoundland and Labrador Hydro, the Applicant named in the attached Application.
- 2. I have read and understand the foregoing Application.
- I have personal knowledge of the facts contained therein, except where otherwise indicated, and they are true to the best of my knowledge, information and belief.

SWORN at St. John's in the)
Province of Newfoundland and)
Labrador, this _/U* day of May 2016,)
this <u>///</u> day of May 2016,)
before me:)

Barrister Newfoundland and Labrador

Terry Gardiner

A REPORT TO THE BOARD OF COMMISSIONERS OF PUBLIC UTILITIES



Transmission and Distribution Line Rerouting

TL-227 and Sally's Cove L1

May 16, 2016



SUMMARY

On January 28, 2016 an area of unstable coastal soil in the vicinity of Sally's Cove, to the west of Route 430, collapsed due to a landslide. A 138-kV transmission line (TL 259), a 69-kV transmission line (TL 227) and a distribution line (Sally's Cove L1), all owned and operated by Newfoundland and Labrador Hydro (Hydro) are currently routed within 10 meters of this area.

The combination of coastal erosion of the weak underlying soil and the increased soil saturation within the area has contributed to landslides along the coastal cliffs of the Northern Peninsula. Occurrences of such events have occurred in neighboring towns such as Daniel's Harbour and have led to the destruction and abandonment of homes, re-routing of roads, utilities and other inconveniences.

Given the priority of the line, emergency rerouting of TL 259 was planned and executed days after the landslide was initially noticed. This proposal is requesting supplemental capital to reroute the remaining two parallel lines TL 227 and Sally's Cove L1 in order to avoid the unstable soils in the area. Approximately 3 km of each line will be rerouted outside of the danger area to take advantage of more stable soil conditions, as similarly completed for TL 259.

A transmission line reroute is required to avoid potential structural failures given the high risk of additional landslides in the area and to ensure Hydro can to provide safe, reliable electrical service to its customers. Potential structural failures can also create safety issues and hazards for Hydro personnel and for the general public.

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APPENDIX A

AMPDEN

1 INTRODUCTION

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- 2 Transmission line TL-259 (138kV), Transmission line TL-227 (69kV) and Distribution Line
- 3 Sally's Cove L1 are located on the Northern Peninsula of Newfoundland and Labrador
- 4 Hydro's (Hydro's) Island Interconnected System in Gros Morne National Park. All three lines
- 5 cross a section of the Northern Peninsula which is prone to coastal erosion. In general, the
- 6 causes of coastal erosion consist of wind, water and ice, with the most devastating effects
- 7 caused by wave-action along the shore.

BELLBURNS DANIELS HR. CAT PORTLAND CREEK ARM JACKSON'S PARSONS POND CONEY SEA ARM ARM COW HEAD! RATTLE BROOK-TL253 WEST-JACKSON'S SALLY'S COVE PORT ARM TAP

Figure 1: Route Photo of TL-259 & TL-227

ORRIS PT.

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- 10 TL-259 was commissioned in 1990 and consists of a variety of wood pole structure types.
- 11 Approximately half of the line consists of single pole tangent, dead end and angled
- 12 structures. The rest of the line consists of double pole (H-frame) tangent and three pole
- dead end and angled structures. The line runs from the Berry Hill Terminal Station to Peters
- 14 Barren Terminal Station, a distance of approximately 87 km and is mutually coupled with TL
- 15 227 from Berry Hill to Cow Head. The conductor is Darien, 559.5 Kcmil AAAC.

- 17 TL-227 was commissioned in 1970 and consists of single pole tangent, dead end and angled
- 18 structures. It runs from the Berry Hill Terminal Station to the Daniels Harbour Terminal

Station, a distance of approximately 82 km and is mutually coupled with TL 259 from Berry 1 2 Hill to Cow Head. The conductor is Partridge 266.8 Kcmil ACSR. 3 4 The Sally's Cove distribution system is a part of the Northern Interconnected system. The 5 line is approximately 6.4 km long and runs from Berry Hill Terminal Station to Green Point 6 (12 km North of Rocky Harbour), providing service to approximately 32 customers. The 7 section of L1 at risk provides service to two customers. 8 9 With the sudden down slope land movement associated with a landslide, any structures 10 located in the affected area can potentially be destroyed. This poses a significant risk that 11 can result in damages or a complete loss of the lines. Also, it is a significant safety hazard for 12 maintenance personnel and an unforeseen risk to the general public. 13 14 Initial inspections were completed by Stantec Engineering (Stantec) on behalf of Parks 15 Canada and Hydro's Environmental and Engineering Group. As defined by Stantec, it was 16 recommended that all lines be rerouted away from the potential landslide area. Given the 17 priority of the line, immediate line rerouting of TL 259 was undertaken and completed on 18 March 16, 2016. Rerouting the remaining lines, TL 227 and Sally's Cove L1 is necessary to 19 avoid potential structural failure. 20 21 2 PROJECT DESCRIPTION 22 23 A concern with TL 259, TL 227 and Sally's Cove L1 proximity to the coastal landslide was first 24 evident on January 28, 2016. Inspections were carried out by representatives from Parks 25 Canada, Stantec and Hydro's Environment and Engineering divisions. The volume of the soil 26 involved in the landslide was extensive, with the closest structure on Sally's Cove L1, within 27 10 meters from the top of the slope. 28 29 This landslide occurred due in large part to the combination of coastal erosion and the weak 30 underlying clay that exist in the area. See Figure 2 and 3 below.



Figure 2: Aerial View of Coastal Landslide near TL 259, TL 227 and Sally's Cove L1



Figure 3: Ground View of Coastal Landslide near TL 259, TL 227 and Sally's Cove L1

- 1 The general inspection, geotechnical conditions, and history of the area were all taken into
- 2 consideration. Due to the severity of the landslides and the unpredictability of future
- 3 events, Stantec recommended that all lines be routed away from the potential landslide
- 4 area. Based on priority, TL 259 was rerouted immediately under an allowance for
- 5 unforeseen work. The rerouting of TL 259 was completed on March 16, 2016.

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- 7 As seen in Figure 4, information presented to Parks Canada by Stantec clearly indicates that
- 8 the existing lines are located in a high risk landslide area and should be relocated to prevent
- 9 future failures and in order to maintain reliability.

- 11 After discussion with Parks Canada, it was decided to relocate all three power lines to the
- east side of the highway, away from the potential landslide zone.

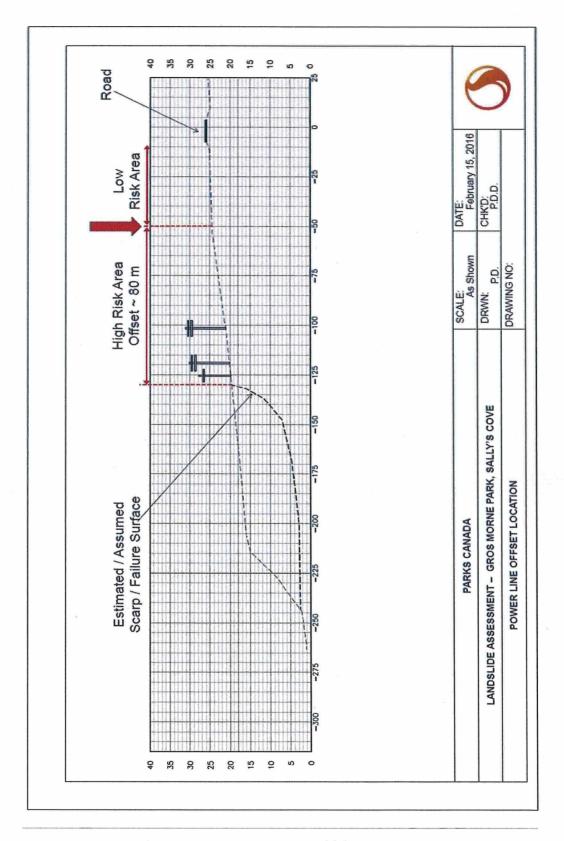


Figure 4: Stantec Engineering Landslide Assessment

The scope of work for this project includes the relocation of approximately three kilometers 1 2 of power lines on TL 227 and Sally's Cove L1 from their current location to the proposed 3 location adjacent to Route 430. Please refer to plan view of the existing lines and proposed reroutes in Appendix A. 4 5 6 The work will be completed by a combination of operational and contractor resources. 7 Environmental monitoring will be completed on a full time basis to ensure compliance with 8 Parks Canada regulations. Operational support will be required to perform switching for 9 outages in order to tie in to the existing lines and all work will be carried out through 10 coordinated transmission and distribution line outages. 11 12 This project proposal does not include a work scope for removal of the sections of line that 13 will be retired. Based on the fact that the existing lines are located in a high risk area, Hydro 14 currently cannot allow personnel to work in the specified area. A plan will be established in 15 the future to safely remove the retired infrastructure in this area. 16 17 Hydro has closely monitored the landslide area since the discovery. In recent weeks, it has 18 been observed that the size of the washout area is increasing. Hydro will continue to 19 monitor the area and the remaining infrastructure in the high risk zone until all lines are 20 relocated. 21 3 **JUSTIFICATION** 22 23 Through the inspections of the coastal landslide near TL-259, TL-227 and Sally's Cove L1, it is 24 recommended that all transmission structures on TL 227 and Sally's Cove L1 currently 25 located west of Route 430 be immediately rerouted to the east side of the highway. A 26 transmission line reroute is justified to avoid potential structural failures given the high risk 27 of additional landslides in the area and in order for Hydro to provide safe, reliable electrical 28 service. Potential structural failures can also create safety issues and hazards for Hydro 29 personnel and for the general public.

1 3.1 Existing System

- 2 TL-227 is a 69kV line constructed in 1970 and has a total of 883 H-frame wooden structures.
- 3 To date, this line has experienced no major failures. Refurbishment work was complete as
- 4 part of the Wood Pole Line Management Program (WPLM) in 2015.

5

- 6 The Sally's Cove L1 distribution line is approximately 6.4 km long and runs from Berry Hill
- 7 Terminal Station to Green Point (12 km North of Rocky Harbour), providing service to
- 8 approximately 32 customers. To date, this line has experienced no major failures. In recent
- 9 years, minor refurbishment work was complete as part of the Wood Pole Line Management
- 10 Program in 2011, 2012 and 2014.

11

12 3.2 Operating Experience

- 13 TL-227 and Sally's Cove L1 are parallel lines supplying electricity to communities in the
- 14 Northern Peninsula. All three lines travel along the coast and are exposed to high winds,
- 15 icing and salt contamination. Coastal erosion of the weak underlying soil and the increased
- soil saturation within the area has contributed to landslides in recent years.

17 18

3.2.1 Reliability Performance

- 19 A section of TL 227 was previously relocated near Daniels Harbour due to similar coastal
- 20 landslide to improve reliability of the electrical system in this area. There have been no
- 21 other impacts on reliability as a result of landslides that are relevant to this work.

22

23

3.2.2 Legislative or Regulatory Requirements

- 24 As this project will occur in Gros Morne National Park, Hydro will ensure compliance with
- 25 any applicable Parks Canada regulations.

26

27 **3.2.3** Safety Performance

- 28 There are numerous issues associated with leaving the transmission and distribution
- 29 structures near a potential landslide area. The risk of collapse creates safety issues and

- hazards for Hydro personnel and for the general public. The structure locations also pose a
 risk to the safety of operations personnel who may be performing climbing activities to
- 3 conduct regular inspections or maintenance work. These lines are currently experiencing a
- 4 high risk of failure and therefore expedited rerouting of the lines is necessary.

5

6 3.2.4 Environmental Performance

- 7 Hydro is working closely with Parks Canada to ensure that the construction does not
- 8 compromise the integrity of Gros Morne National Park. Parks Canada advised that there is
- 9 no potential plant or animal species at risk in the area of the line reroutes.

10

11 3.2.5 Industry Experience

12 Industry Experience is not applicable for this project.

13

14 3.2.6 Vendor Recommendations

15 Vendor Recommendations is not applicable for this project.

16

17 3.2.7 Maintenance or Support Arrangements

18 The lines are inspected and maintained by Hydro Operations.

19

20 3.2.8 Maintenance History

21 Maintenance History is not relevant for this project proposal.

22

23

3.2.9 Historical Information

- 24 The combination of coastal erosion of the weak underlying soil and the increased soil
- 25 saturation within the area has contributed to devastating landslides along the coastal cliffs
- 26 on the North-West coast of the province.

- 28 The small neighboring community of Daniel's Harbour has experienced the effects of such
- an event. Occurrences in 2006, 07, 08 and again in 09 have led to the destruction and

abandonment of homes and other nearby structures, temporary and permanent re-routing of roads, and other inconveniences for the town's residents.



Figure 5: Results of Landslide in Daniel's Harbour 2007

History indicates that subsequent landslides in the area are likely. Rerouting of TL 259 was conducted immediately under emergency replacement work. Rerouting approximately three km of each of the remaining lines, TL 227 and Sally's Cove L1 is being proposed as the preferred alternative to provide safe, reliable electrical service to the general public.

3.2.10 Anticipated Useful Life

The proposed work for these lines will not change the anticipated useful life of the infrastructure as it will still be limited by the original installation date and condition of the other sections of the lines in question.

3.3 Forecast Customer Growth

There is no significant load growth on these systems for the next five years that is anticipated to have an impact on this project.

1	3.4	Development of Alternatives
2	Two a	lternatives were considered;
3		1) Rerouting the transmission and distribution lines away from the landslide danger
4		area, and;
5		2) Allowing the existing lines to remain in service in the danger area risking potential
6		failure.
7		
8	Alterr	native 1
9	This a	Iternative is the safest and most efficient of the two alternatives. Due to the severity
10	of the	landslide and the unpredictability of future events it was recommended that all
11	transı	mission and distribution structures currently located in the affected area be rerouted
12	to an	area outside the potential landslide zone.
13		
14	<u>Alterr</u>	native 2
15	Allow	ing the existing lines to remain in service in the danger area and risking potential
16	failure	e is not viable as it negatively affects the reliability of electrical service provided to
17	Hydro	's customers. Failing structures also cause energized electrical conductors to fall to
18	the gr	ound and a risk of electrical shock or electrocution exists for Hydro employees and
19	local	citizens. Due to the safety hazards, this is not a viable option.
20		
21	3.5	Evaluation of Alternatives
22	There	are no viable alternatives to rerouting the structures away from the potential
23	landsl	ide failure area.
24		
25	3.5.1	Energy Efficiency Benefits
26	There	are no energy efficiency benefits that can be attributed to this project.
27		
28	3.5.2	Economic Analysis

A net present value calculation was not performed in this instance as there are no viable

alternatives to rerouting the right of way for TL 259, TL 227 and Sally's Cove L1.

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3 This project will have no effect on the levelized cost of electricity since no new generation

4 source is involved.

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A cost benefit analysis calculation was not performed in this instance as there are no quantifiable benefits.

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4 CONCLUSION

This project is required to ensure that a reliable energy supply is available for the customers serviced by each of the lines. Since the existing lines are located in a high risk landslide area, rerouting of TL 227 and Sally's Cove L1 is being proposed as the preferred alternative to avoid unstable soils and the risk of potential failure.

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As a leader in safety, Hydro will not allow personnel to perform work in areas such as a potential landslide zone. The risk of collapse creates a major safety issue for Hydro personnel and for the general public.

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4.1 Budget Estimate

The budget estimate for this project is shown in Table 4.

Table 4: Project Budget Estimate

Project Cost: (\$ x1,000) Material Supply	2016 480.0	$\frac{2017}{0.0}$	Beyond 0.0	<u>Total</u> 480.0
Labour	192.5	0.0	0.0	336.7
Consultant	0.0	0.0	0.0	0.0
Contract Work	0.0	930.0	0.0	930.0
Other Direct Costs	40.0	20.0	0.0	60.0
Interest and Escalation	4.5	77.5	0.0	82.0
Contingency	0.0	361.3	0.0	361.3
TOTAL	717.0	1,533.0	0.0	2,250.0

4.2 Project Schedule

2 The anticipated project schedule is shown in Table 5. These are tentative dates and a more

detailed project schedule will be provided once input is received from all groups involved.

4

3

1

Table 5: Project Schedule

Activity	Start Date	End Date	
Project Startup	June 1, 2016	N/A	
Environmental Assessment	July 1, 2016	Sept 1, 2016	
Engineering	August 1, 2016	Sept 15, 2016	
Material Procurement	Sept 1, 2016	Nov 1, 2016	
Construction (Dependent upon Park Approval)	TBD	TBD	
Project Closeout	June 1, 2017	N/A	

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As this project will occur within Gros Morne National Park, construction is dependent upon

7 approval to proceed from Parks Canada. Parks Canada has advised that approval for

rerouting TL 259 in February 2016 was permitted as it was considered an emergency under

9 Section 70 (c) of the <u>Canadian Environmental Assessment Act, 2012</u>, to avert an electrical

"blackout" which would have seriously affected residents of the Great Northern Peninsula.

11 However, any additional work at this site will now require an approved environmental

assessment Basic Impact Analysis from Parks Canada. Hydro will commence this process

with Parks Canada as soon as practicable. Due to the potential for environmental impacts to

this sensitive landscape, Parks Canada is not prepared to permit further hydro line work at

this area when ground conditions are soft. It is recommended that all further pole

installations on the site be postponed until ground conditions permit, after the ground

surfaces have sufficiently frozen to support the weight and use of heavy equipment

required for additional hydro line installations.

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As a result, Hydro will commence the proposed construction as soon as ground conditions

allow based on recommendations and approval from Parks Canada. The proposed schedule

indicates engineering, planning, and contract award will occur in 2016, with construction expected to start as soon as ground conditions allow. It is currently expected that

construction will start in January 2017 as Parks Canada prefers that the ground be

- 1 sufficiently frozen to allow for heavy equipment travel as frozen ground mitigates
- 2 environmental tear up. Construction may be expedited depending on site conditions and
- 3 Hydro is making every effort to ensure it is in a position to relocate the remaining
- 4 infrastructure as soon as possible. If ground conditions allow, and approval from Parks
- 5 Canada is received, the proposed construction could start as early as late November or early
- 6 December 2016. This work is being proposed as a Supplement to the 2016 Capital Budget to
- 7 ensure adequate time to plan and execute work in the most cost effective and efficient
- 8 manner. Submitting this request as a part of the 2017 Capital Budget Proposal will not
- 9 provide adequate time to properly plan and execute the work once environmental
- 10 conditions allow, which could be as early as November 2016.

