



July 17, 2014

Ms. G. Cheryl Blundon  
Board of Commissioners of Public Utilities  
120 Torbay Road, P.O. Box 12040  
St. John's, NL A1A 5B2

Ladies & Gentlemen:

**Re: Newfoundland and Labrador Hydro – Application for Approval of the Upgrade of the  
Transmission Line Corridor from Bay d'Espoir to Western Avalon**

In relation to the above noted, please find enclosed the original and twelve (12) copies of the Requests for Information numbered CA-NLH-1 to CA-NLH-20.

We trust you will find the enclosed to be in order.

Yours very truly,



O'DEA EARLE

THOMAS JOHNSON

TJ/cel

Encl.

cc: Newfoundland and Labrador Hydro  
Attention: Geoffrey P. Young

Newfoundland Power  
Attention: Gerard Hayes,

Island Industrial Customers Group  
Attention: Mr. Paul Coxworthy (Stewart McKelvey)

Vale Newfoundland and Labrador Limited  
Attention: Mr. Thomas O'Reilly, Q.C. (Cox & Palmer)

Praxair Canada Inc.  
Attention: Ms. Sheryl Nisenbaum

Mr. Danny Dumaresque

Grand Riverkeeper Labrador Inc.  
Attention: Ms. Roberta Frampton Benefiel

**IN THE MATTER OF** the *Electrical Power Control Act*, R.S.N.L. 1994, Chapter E-5.1 (the *EPCA*) and the *Public Utilities Act*, R.S.N.L. 1990, Chapter P-47 (the *Act*), and the 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 Upgrade of the Transmission Line Corridor from Bay d’Espoir to Western Avalon.

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**CONSUMER ADVOCATE  
REQUESTS FOR INFORMATION  
CA-NLH-1 to CA-NLH-20  
Issued: July 17, 2014**

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1 CA-NLH-1 (page viii, report entitled Upgrade Transmission Line Corridor –  
2 Bay d’Espoir to Western Avalon) It is stated “*the construction of*  
3 *parallel lines reduces the overall transmission corridor impedance*  
4 *and thereby “stiffens” the transmission network so that it is less*  
5 *susceptible to instability. As well, it increases the real power*  
6 *transfer limits and reduces losses”*. What is the firm transfer  
7 capacity into, and within, the Avalon Peninsula pre- and post-  
8 upgrade of the Bay d-Espoir to Western Avalon transmission line  
9 corridor?  
10

11 CA-NLH-2 (page viii, report entitled Upgrade Transmission Line Corridor –  
12 Bay d’Espoir to Western Avalon) It is stated “*the construction of*  
13 *parallel lines reduces the overall transmission corridor impedance*  
14 *and thereby “stiffens” the transmission network so that it is less*  
15 *susceptible to instability. As well, it increases the real power*  
16 *transfer limits and reduces losses”*. What is the system loss  
17 reduction in each of the first 10 years following commissioning of  
18 the upgrade of the Bay d-Espoir to Western Avalon transmission  
19 line corridor and what is the estimated value of the loss reduction  
20 savings in each of these years?  
21

22 CA-NLH-3 (page ix, report entitled Upgrade Transmission Line Corridor –  
23 Bay d’Espoir to Western Avalon) It is stated “*Following the*  
24 *conclusion of the CT proposal and clarification of its*  
25 *characteristics, the requirements for further reactive support in the*  
26 *Avalon Peninsula area will be determined and will be planned to*  
27 *be in service at the time LIL is operational”*. Now that the CT  
28 project is underway, what further reactive support in the Avalon  
29 Peninsula is needed, what is its estimated cost and what is the  
30 schedule for its completion?  
31

1 CA-NLH-4 (page ix, report entitled Upgrade Transmission Line Corridor –  
2 Bay d’Espoir to Western Avalon) It is stated “*Hydro is*  
3 *recommending the construction of a new 230 kV transmission line,*  
4 *approximately 188 km in length, between Bay d-Espoir and*  
5 *Western Avalon terminal stations at an estimated capital cost of*  
6 *\$291.7 million with an in service date of May 1, 2018*”. What is  
7 the estimated impact on rates of this project?  
8

9 CA-NLH-5 (page 8, report entitled Upgrade Transmission Line Corridor – Bay  
10 d’Espoir to Western Avalon) Section 3 lists Hydro’s transmission  
11 planning criteria. Please summarize in a table all Hydro criteria  
12 that fall short of NPCC criteria, and explain how they come up  
13 short, what Hydro plans to do about it, and the cost if Hydro were  
14 to bring the criteria up to NPCC standards.  
15

16 CA-NLH-6 (page 53, report entitled Upgrade Transmission Line Corridor –  
17 Bay d’Espoir to Western Avalon) It is stated “*Without this new*  
18 *transmission line, imports from Nova Scotia during a LIL outage*  
19 *will be limited*”. The report identifies the technical limit of 300  
20 MW via Nova Scotia to NL, but does not identify for planning  
21 studies how much capacity Hydro will rely on via the Maritime  
22 link from Nova Scotia. What is the amount of capacity will Hydro  
23 depend on for planning purposes via the Maritime link, and what is  
24 the basis for this calculation?  
25

26 CA-NLH-7 (page 53, report entitled Upgrade Transmission Line Corridor –  
27 Bay d’Espoir to Western Avalon) It is stated “*Without this new*  
28 *transmission line, imports from Nova Scotia during a LIL outage*  
29 *will be limited*”. By how much will imports via Nova Scotia be  
30 limited?  
31

1 CA-NLH-8 (page 67, report entitled Upgrade Transmission Line Corridor –  
2 Bay d’Espoir to Western Avalon) It is stated “*Approval has*  
3 *already been requested to undertake these activities concurrently*”.  
4 What is the current status of environmental approvals relating to  
5 the project?  
6

7 CA-NLH-9 (Table 9.1, page 68, report entitled Upgrade Transmission Line  
8 Corridor – Bay d’Espoir to Western Avalon) Please provide details  
9 relating to the management and procurement of the transmission  
10 upgrade project. Will the project require that Hydro hire additional  
11 staff during and/or post construction of the transmission upgrade  
12 project?  
13

14 CA-NLH-10 (Appendix C1 to report entitled Upgrade Transmission Line  
15 Corridor – Bay d’Espoir to Western Avalon) Please provide a table  
16 including a detailed comparison of the cost estimate submitted in  
17 this application to that submitted to the Board in September 2011.  
18

19 CA-NLH-11 What value and types of renewable generation (MW), proposed for  
20 the Avalon Peninsula, have been considered in the steady and  
21 stability studies?  
22

23 CA-NLH-12 The report mentions that temporary bipole faults, with recovery  
24 after 200 msec, were considered in the study. Please provide some  
25 examples of a temporary bipole fault. Please explain how the  
26 converters were modelled to recover from a temporary bipole fault.  
27 Do permanent bipolar faults cause overloads or instability?  
28

29 CA-NLH-13 The Maritime HVDC Link was recently awarded, July 9, 2014,  
30 using voltage source converters in a bipolar configuration. The  
31 converters will be connected to an HVDC overhead line, an HVDC

underground cable and an HVDC submarine cable, a very similar configuration planned for the Labrador Island Link. Would the use of voltage source converters for the LIL have an impact on the study results and possibly the justification of the new 230kV transmission line?

CA-NLH-14      The report states the LIL has a continuous monopolar operation – earth return current of 1,929Adc. What is the allowable continuous current for monopolar metallic return operation?

CA-NLH-15      Report section 6.3.5 notes that most of the analysis was not completed considering the Maritime Link. It was recently announced that the Maritime Link will use voltage source converters in a bipolar configuration. Please identify any study cases that will be re-run with Maritime modelled as a VSC converter.

CA-NLH-16      The Western Avalon Terminal Station 230kV expansion is proposed to be by GIS (gas insulated switchgear) due to a \$2.5M lower capital cost. GIS equipment can be O&M cost intensive over time due to the repair of SF6 gas leaks and regular maintenance on devices that require the removal and replacement of the SF6 gas. What is the approximate difference in O&M costs over 30 years between GIS and open-air designs?

CA-NLH-17      The report indicates that the proposed alternative was the only technically-viable alternative considered (Section 7.0, page 56). What other alternatives are available that meet the technical requirements of the system and how do they compare economically to the proposed alternative?

1 CA-NLH-18 Hydro outlines at page 12 that its transient analysis criteria meet  
2 NERC requirements with several exceptions. Hydro also states as  
3 equipment is replaced, expanded or upgraded, improvements will  
4 continue to be considered for further compliance where prudent to  
5 do so. Has Hydro determined whether compliance with NERC  
6 requirements is something Hydro can delay if Hydro determines an  
7 upgrade is not “prudent”?

8

9 CA-NLH-19 Has Hydro determined whether compliance will be required in  
10 terms of its practice of having multiple transformers connected to  
11 the same high voltage bus and the requirement to remain stable  
12 with no loss of load for a three phase fault on the 230 kV?

13

14 CA-NLH-20 Has Hydro investigated the potential costs of NERC compliance if  
15 Hydro is not able to put off improvements it does not deem  
16 “prudent”?

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18 Dated at St. John’s in the Province of Newfoundland and Labrador, this 17<sup>th</sup> day of June,  
19 2014.

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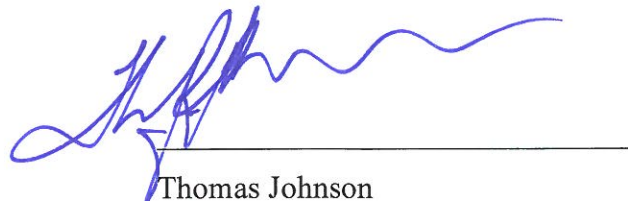
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Thomas Johnson

Consumer Advocate

323 Duckworth Street

St. John’s, NL A1C 5X4

Telephone: (709) 726-3524

Facsimile: (709) 726-9600

Email: tjohnson@odeacarle.ca