



Hydro Place, 500 Columbus Drive.
P.O. Box 12400, St. John's, NL
Canada A1B 4K7
t. 709.737.1400 f. 709.737.1800
www.nlh.nl.ca

April 18, 2016

The 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 Corporate Services & Board Secretary

Dear Ms. Blundon:


Re: A Revised Application by Newfoundland and Labrador Hydro (Hydro) pursuant to Subsection 41(3) of the Act for the approval of the procurement of 12 MW of diesel generation at Holyrood – Final Submission

Enclosed please find the original plus 12 copies of Newfoundland and Labrador Hydro's submission with regard to the above-noted application.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO


Tracey L. Pennell
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 O' Reilly – Cox & Palmer

NEWFOUNDLAND AND LABRADOR HYDRO
SUBMISSION REGARDING
PROCUREMENT OF 12 MW DIESEL GENERATION AT
HOLYROOD (REVISED)

April 18, 2016



Table of Contents

1.0 Background 1

2.0 Intervenor Submissions 1

3.0 Other Benefits of Purchase 3

4.0 Conclusion 4

1 **1.0 Background**

2 On November 22, 2015, Newfoundland and Labrador Hydro (Hydro) filed an application for
3 approval to purchase six of the eight 2 MW mobile diesel generators that it is presently leasing
4 for black start purposes at the Holyrood Thermal Generation Station (Holyrood TGS) (the
5 Original Application). The lease for these diesels was approved pursuant to Order No.
6 P.U.38(2013). Due to a change in the justification, on February 22, 2016, Hydro withdrew the
7 Original Application and filed a revised application for the purchase of six of the eight 2 MW
8 mobile diesel generators and associated equipment located at Holyrood for an estimated
9 additional capital cost of \$5.0 million. Hydro also seeks approval to defer and amortize over a
10 period of five years, a portion of the lease payments which can be applied to the purchase price
11 of the mobile diesel generators (the Revised Application). These are Hydro’s submissions on
12 the Revised Application.

13

14 **2.0 Intervenor Submissions**

15 Newfoundland Power has stated that it has no comments on this Application. Vale
16 Newfoundland and Labrador Limited stated that it takes no position on this Application.
17 Additionally, the Industrial Customers have withdrawn their previous opposition to the Original
18 Application to Hydro’s purchase of the 12 MW diesels based on Hydro’s analysis and evidence
19 provided in the Revised Application. In particular, the Industrial Customers stated that:

20

21 *...the 12 MW of diesels will provide further (and apparently reasonably prudent)*
22 *assurance of reliability and electricity supply over the 2016-2020 period.*

23

24 **Consumer Advocate (CA)**

25 The CA has argued that the purchase of the diesels is not justified on the basis of system need
26 or on the basis of economics. Hydro respectfully disagrees with the CA’s position as further
27 detailed below.

1 *System Reliability and Supply*

2

3 The CA submits that the purchase of the mobile diesels is not justified on the basis of system
4 need for reliability or quality of supply.

5

6 Hydro respectfully disagrees with the CA's position. Hydro's mandate is to provide safe and
7 reliable electrical service to its customers. Consistent with that mandate, Hydro has enhanced
8 its capabilities to plan for and manage the electrical system for matters that may affect
9 reliability. This includes updating its generation planning criteria which includes a dedicated
10 assessment of system conditions on the Avalon Peninsula. As stated in Hydro's report to the
11 Revised Application, the mobile diesels are required to ensure adequacy of supply on the
12 Avalon Peninsula for a P-90 peak loading condition in the event of a single worst-case
13 contingency involving the loss of transmission line TL202 or TL206 from Bay d'Espoir to
14 Sunnyside.

15

16 It is noted that, strictly speaking, this is not a violation of Hydro's planning criteria as there is no
17 transmission line overload for a P50 peak loading condition. However, Hydro has investigated
18 P90 peak loading conditions in accordance with page 7 of the "*Liberty Consulting Review of the*
19 *March 4, 2015 Voltage Collapse*" in which it is stated that "*Liberty continues to believe that*
20 *Hydro should be significantly enhancing its capabilities to plan and manage reliability*
21 *contingencies.*" The P90 analysis does indicate that there is a risk of a capacity shortfall for the
22 Avalon Peninsula for a single contingency. This risk is noteworthy and should be considered in
23 combination with Hydro's increased reliance on standby generation to ensure reliable
24 operation of the transmission system.

25

26 As indicated in Hydro's report to the Revised Application, a load flow analysis shows that the
27 mobile diesels are required to ensure adequacy of supply on the Avalon Peninsula where all
28 generating units are assumed to be able to generate at full capacity. It is important to note that

1 due to recent availability concerns of the thermal generating units at Holyrood TGS, Hydro is
2 currently performing a review of Holyrood and its future capability. Any outcome of that review
3 that recommends a reduction in the capacity of the thermal units would unavoidably
4 acknowledge an increased reliance on standby generation, including the mobile diesels.

5 As stated in Hydro's report and in the responses to DG-NP-NLH-002 and DG-NP-NLH-005, the
6 mobile diesels were operated on 20 occasions in order to support Avalon reserves during late
7 December 2015, and throughout January and February 2016. This is further evidence of the
8 importance of these units in contributing to the generation mix that allows Hydro to reliably
9 meet its customer demand requirements.

10

11 *Black Start Capability*

12 The CA also states that the mobile diesels are not required to provide black start capability for
13 the Holyrood TGS as the new combustion turbine (Holyrood CT) can meet this requirement.
14 Hydro respectfully disagrees with this statement and submits that based on the current
15 configuration of the Holyrood TGS, the diesels are in fact required for black start capability.
16 While the commissioning plan for the Holyrood CT included a test to confirm that the CT could
17 reliably black start the Holyrood TGS, the first phase of the black start testing of the Holyrood
18 CT has yet to be completed. As a result, the diesels continue to provide a black start solution for
19 the Holyrood TGS. As noted in the report to the Revised Application at Appendix D, if approved,
20 the diesels will continue to provide a reliable black start solution for the Holyrood TGS, a
21 function for which they have been tested and proven to provide. As a result, there will be no
22 requirement to construct a secondary connection to the Holyrood CT, resulting in a cost savings
23 for the Holyrood CT project of approximately \$480,000.

24

25 **3.0 Other Benefits of Purchase**

26 The Revised Application demonstrates that Hydro currently has an opportunity to purchase
27 additional, generation at a low purchase price. In 2020, after the interconnections to Labrador

1 and Nova Scotia are complete, and the diesels are no longer required for black start of the
2 Holyrood TGS, or for peaking or back-up, these units and associated 2.5 MVA transformers, may
3 be either sold by Hydro at or may be retained to meet other generation needs of Hydro.
4 Current estimates indicate that \$4,068,000 CAN is a reasonable estimate of the resale price in
5 2020. Alternatively, these units could be utilized by Hydro as emergency generation on
6 distribution systems, generation support at interconnected diesel plants or for mobile power
7 for distribution capital projects. As previously stated by Hydro, Hydro will apply to the Board for
8 action in that year, based on what is appropriate and justified at that time.

9

10 **4.0 Conclusion**

11 The six mobile diesels are a key component of Hydro's reliable operation of the electrical
12 system and should be purchased and maintained in Hydro's generation fleet. Hydro currently
13 has the opportunity to buy these diesels at a relatively low cost. The purchase of these diesels
14 will reduce the risk of a shortfall of capacity for customers on the Avalon Peninsula in the event
15 of a single worst-case contingency using a P90 peak loading condition. The diesels will also
16 continue to provide black start capability to the Holyrood TGS. Further, due to recent
17 availability concerns of the thermal generating units at Holyrood TGS, Hydro is currently
18 performing a review of Holyrood and its future capability which could result in Hydro increasing
19 its reliance on standby generation, including the mobile diesels. If the outcome of this review
20 indicates a reduction in capacity of any units going forward, the need for the diesels to meet
21 the peak customer demand requirements is even further supported. Based on the foregoing,
22 Hydro submits that approval by the Board of the purchase of the six 2 MW mobile diesel
23 generators as set out the Revised Application, is consistent with the provision of reliable service
24 to customers at a reasonable cost.