

**NEWFOUNDLAND AND LABRADOR
BOARD OF COMMISSIONERS OF PUBLIC UTILITIES**

AN ORDER OF THE BOARD

NO. P.U. 13(2015)

1 **IN THE MATTER OF** the Electrical Power
2 Control Act, 1994, SNL 1994, Chapter E-5.1 (the
3 “EPCA”) and the Public Utilities Act, RSNL 1990,
4 Chapter P-47 (the “Act”), as amended, and regulations
5 thereunder; and
6

7 **IN THE MATTER OF** an investigation and hearing
8 into supply issues and power outages on the
9 Island Interconnected system; and
10

11 **IN THE MATTER OF** an application by Newfoundland
12 Power Inc. for an order directing Newfoundland and
13 Labrador Hydro to provide full and adequate responses
14 to three requests for information, including the disclosure
15 and production of documents, report and records.
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17

18 **Application**
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20 On March 20, 2015 Newfoundland Power Inc. (“Newfoundland Power”) filed an application
21 (“Application”) requesting an order of the Board compelling Newfoundland and Labrador Hydro
22 (“Hydro”) to file full and adequate responses to requests for information (“RFI”s), NP-NLH-004,
23 NP-NLH-005 and NP-NLH-018, filed on September 19, 2014 as part of the Board’s ongoing
24 investigation into supply issues and power outages on the Island Interconnected system.
25

26 The Application was supported by an affidavit of Elias Ghannoum, a transmission engineering
27 expert retained by Newfoundland Power. According to the affidavit Mr. Ghannoum has been
28 retained to evaluate and provide an opinion concerning the degree to which Hydro and its
29 affiliates, including Nalcor Energy (“Nalcor”), have addressed the risks to supply presented by
30 electrical transmission systems serving the island of Newfoundland following the construction of
31 the Labrador-Island HVdc transmission system and after interconnection with the Muskrat Falls
32 generating facility.
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34 The Application was circulated to Hydro and the intervenors in the investigation. Grand
35 Riverkeeper Labrador Inc. filed a submission on April 1, 2015. Hydro, the Consumer Advocate
36 and Corner Brook Pulp and Paper Limited, NARL Refining Limited Partnership (formerly North
37 Atlantic Refining Limited) and Teck Resources Limited (the “Industrial Customer Group”) filed
38 submissions on April 13, 2015. Newfoundland Power filed a reply on April 21, 2015. Mr. Danny
39 Dumaresque did not file a submission in relation to the Application.

1 **Background**

2
3 Following power outages and supply issues on the Island Interconnected system in late
4 December 2013 and early January 2014 the Board began an investigation. On February 19, 2014
5 the Board issued Order No. P.U. 3(2014) which identified the intervenors and set out the process
6 to be followed in the matter, stating at page 3:

7
8 *WHEREAS the Board has considered the lists of issues, submissions, written comments and*
9 *presentations and has determined that it is appropriate and necessary to address how Hydro*
10 *and Newfoundland Power will ensure adequacy and reliability on the Island Interconnected*
11 *system over the short, medium and long-term, which will require analysis of the adequacy*
12 *and reliability of the system after the commissioning of the Muskrat Falls generating facility*
13 *and the Labrador Island Link;*

14
15 In Schedule "A" to the Order the Board listed the issues to be addressed in its final report,
16 including:

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18 *Evaluation of Island Interconnected system adequacy and reliability up to and after the*
19 *interconnection with the Muskrat Falls generating facility*

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- *Load forecasting methodologies*
 - *Utility coordination of system operations and load growth planning*
 - *Asset management strategies for generation and transmission assets, including maintenance of the Holyrood plant and the gas turbines*
 - *Adequacy of resources to manage capital and operating programs*
 - *New generation options and the role of conservation and demand management to address load growth until the interconnection, including consideration of possible delays in the interconnection*
 - *Back-up generation and/or alternative supply requirements after interconnection*
 - *Other system planning, capital and operational issues which may impact adequacy and reliability before and after interconnection*

32 On April 30, 2014 the Board issued Order No. P.U. 15(2014) addressing the application of
33 Grand Riverkeeper Labrador, Inc. to be made an intervenor in the proceeding.

34
35 On May 16, 2014 the Board issued its Interim Report noting that the investigation is ongoing and
36 that a number of issues continue to be investigated, including the reliability and adequacy of the
37 Island Interconnected system.

38
39 On October 10, 2014 the Board advised the parties that the investigation would be divided into
40 two phases. Phase One would deal with the immediate reliability issues for the Island
41 Interconnected system prior to interconnection with Muskrat Falls. Reliability issues post
42 Muskrat Falls interconnection would be addressed in Phase Two.

43
44 On October 16, 2014 the Board issued Order No. P.U. 41(2014) addressing a motion by Hydro
45 requesting the Board to determine that a number of RFIs filed by two intervenors, Mr.
46 Dumaresque and the Grand Riverkeeper Labrador, Inc. were outside the scope of the proceeding.

1 On October 31, 2014 the Board advised the parties of the issues to be considered in each phase
2 of the investigation. In relation to the scope of Phase Two the Board stated:

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4 *Phase Two will focus on the implications of the interconnection with Muskrat Falls on*
5 *reliability and adequacy of the Island Interconnected system. The following issues are*
6 *expected to be addressed in this phase of the proceeding:*

- 7
8 *1. the impact of the interconnection with Muskrat Fall on the Island Interconnected system;*
9 *2. Island Interconnected system structure and operations;*
10 *3. the impact of the Maritime Link, including the availability of power over the Maritime*
11 *Link; and*
12 *4. risk management.*

13
14 On February 17, 2015 the Board issued Order No. P.U. 5(2015) addressing a motion by Grand
15 Riverkeeper Labrador Inc. with respect to Hydro's responses to certain RFIs.

16
17 On March 31, 2015 the Board held a hearing on Phase One. All reports, RFIs and submissions
18 for Phase One have now been received by the Board and work on Phase Two is proceeding.

19
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21 **Submissions**

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23 The RFIs at issue relate to Phase Two of the Board's investigation and are set out below:

24
25 **NP-NLH-004** *Please confirm the return period of climatic loads used in the design of the*
26 *Labrador-Island HVdc Link and provide all the detailed ice and wind*
27 *weather cases as well as suspension tower load cases, including the*
28 *mathematical calculations supporting them.*

29
30 **NP-NLH-005** *Please confirm the return period of climatic loads used in the design of the*
31 *proposed 230 kV transmission line from Bay d'Espoir to Western Avalon*
32 *and provide all the detailed ice and wind weather cases as well as*
33 *suspension tower load cases, including the mathematical calculations*
34 *supporting them.*

35
36 **NP-NLH-018** *Please provide a copy of the design specifications of all line components of*
37 *the Labrador-Island HVdc Link and the proposed 230 kV line from Bay*
38 *d'Espoir to Western Avalon, including tower loads, conductor sag-*
39 *tensions and any other supporting documents.*

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41 The affidavit of Mr. Ghannoum states that the responses to NP-NLH-004 and NP-NLH-05 did
42 not provide the requested mathematical calculations which are a requirement of transmission line
43 and tower design and would show how weather loads were used to generate tower loading cases
44 for transmission tower design. According to Mr. Ghannoum the mathematical calculations
45 disclose the extent to which a chosen design addresses the structural and mechanical risks to the
46 reliability of electrical transmission systems. Mr. Ghannoum further states that the mathematical
47 calculations requested in NP-NLH-004 and NP-NLH-005 is information which is typically used
48 by engineers in the design of overhead electrical transmission systems and should be readily

1 available and easily transmittable in electronic format. He submits that it is information typically
 2 reviewed by engineers for the purpose of evaluating the reliability and security of overhead
 3 electrical transmission systems, and without this information, Mr. Ghannoum submits he is
 4 unable to properly evaluate the degree to which Hydro and its affiliates have addressed the risks
 5 to supply presented by electrical transmission systems serving the eastern portion of the island of
 6 Newfoundland following the construction of the Labrador-Island HVdc transmission system and
 7 after interconnection of the Muskrat Falls generating facility.

8
 9 With respect to NP-NLH-018, the affidavit of Mr. Ghannoum states that Hydro's response did
 10 not provide the requested design specifications of the line components which, in engineering
 11 practice, would disclose the extent to which a chosen design addresses the structural and
 12 mechanical risks to the reliability of electrical transmission system. He states that the design
 13 specifications requested in NP-NLH-018 is information which is typically used by engineers in
 14 the design of overhead electrical transmission systems and should be readily available and easily
 15 transmittable in electronic format and is information typically reviewed by engineers for the
 16 purpose of evaluating the reliability and security of overhead electrical transmission systems.
 17 Without this information Mr. Ghannoum submits he is unable to properly evaluate the degree to
 18 which Hydro and its affiliates have addressed the risks to supply presented by electrical
 19 transmission systems serving the eastern portion of the island of Newfoundland following the
 20 construction of the Labrador – Island HVdc transmission system and after interconnection of the
 21 Muskrat Falls generating facility.

22
 23 At page 2 of the Application Newfoundland Power states:

- 24
 25 8. *As a result of the failure of Hydro to provide full and adequate responses to each*
 26 *of the RFIs as referred to in paragraph 5 of this Application, Newfoundland Power*
 27 *is not in a position to fully assess or evaluate Island Interconnected System*
 28 *adequacy and reliability after interconnection with the Muskrat Falls generating*
 29 *facility as provided by Order No. P.U. 3(2014).*
 30
 31 9. *Newfoundland Power will require further information concerning the design of the*
 32 *Labrador-Island HVdc transmission system (the "Labrador-Island HVdc Link) to*
 33 *assess and evaluate Island Interconnected system adequacy and reliability after*
 34 *interconnection with the Muskrat Falls generating facility as provided by Order*
 35 *No. P.U. 3(2014).*
 36

37 In relation to NP-NLH-04, Hydro states that it has provided a 57 page response with detailed,
 38 numerical information regarding the return period of climatic loads used in the design of the
 39 Labrador-Island HVdc Link together with detailed information on the ice and wind weather
 40 causes. Hydro submits that it is not necessary or appropriate to provide all of the specific
 41 suspension tower load cases and the mathematical calculations supporting each of those in order
 42 for other parties, including the Board, to evaluate the risk of reliability. Hydro submits at page 2
 43 of its reply:

44
 45 *There is a significant distinction between the meteorological loading input used for the*
 46 *design of the LIL and the detailed engineering calculations used for the design and*
 47 *construction of the LIL. Selection of return periods and load conditions provides an input*
 48 *into the overall reliability of the transmission line, consistent with the Board's review*

1 *process. This is quite distinct from verification for the accuracy of Nalcor's engineering*
2 *consultant's calculations which is the information that Newfoundland Power is seeking to*
3 *obtain and review. The meteorological design inputs have been provided as well as the*
4 *basis for these inputs. While this information is relevant to the Phase 2 review, nothing in*
5 *the terms of reference for this aspect of the review, or the related Board Orders,*
6 *contemplates a review of the underlying engineering calculations utilized in the*
7 *development of the LIL.*

8
9 Hydro quotes from Order No. P.U. 41(2014) where the Board stated, at page 26, that "*this*
10 *proceeding will not involve an analysis of engineering and construction issues associated with*
11 *the Muskrat Falls project*" and "*...it is not necessary for Hydro to provide detailed technical*
12 *information or reports related to engineering and construction issues but rather should direct its*
13 *response to the risks and consequences to the Island Interconnected system of the scenarios and*
14 *issues raised.*" Hydro submits that it has done as directed by the Board with the filed response to
15 NP-NLH-004 and that the level of detail requested by Newfoundland Power is well beyond what
16 was anticipated by the Board. Hydro states that Newfoundland Power's consultant should
17 provide his opinion with respect to the reliability of the Labrador-Island HVdc Link within the
18 confines of the review process.

19
20 In relation to NP-NLH-05, Hydro submits that it provided a full response to the question,
21 notwithstanding that the request for information was in relation to a separate line from the
22 Labrador-Island HVdc Link. Hydro notes that the transmission line between Bay d'Espoir and
23 Western Avalon will be constructed to Hydro's standard design criteria and any further revisions
24 which may be required to meet the return periods will be considered during the detailed design.
25 Hydro also notes that this transmission line was the subject of a separate Board approval process.

26
27 With respect to NP-NLH-018 Hydro submits that this information is clearly well beyond the
28 scope of the Phase Two review and what is necessary in regard to a determination of post-
29 Muskrat reliability. Hydro states that a review of the design specifications and design parameters
30 involves an analysis of engineering and constructions issues associated with the Muskrat Falls
31 projects, contrary to the Board's expressed statements.

32
33 Grand Riverkeeper Labrador, Inc. states that for Hydro to be meaningfully heard the information
34 which is sought by Newfoundland Power should be provided. Grand Riverkeeper Labrador, Inc.
35 submits that the information sought exists and that its communication would not create an undue
36 burden upon Hydro. For reasons of natural justice Grand Riverkeeper Labrador, Inc. supports
37 Newfoundland Power's request that Hydro be ordered to provide full, complete and meaningful
38 responses to the RFIs.

39
40 Hydro responds to the submission of Grand Riverkeeper Labrador, Inc., submitting that there is
41 no issue of natural justice or procedural fairness with denying Newfoundland Power's
42 application as full responses within the parameters of Phase Two have been provided.

43
44 The Consumer Advocate states that he regards the information being sought as necessary and
45 relevant to informing the Board and the parties as to important issues before the Board in Phase
46 Two. The Consumer Advocate agrees with Newfoundland Power that the information sought
47 will provide evidence relating to the "*assessment of risks to reliable electricity supply on the*

1 *island of Newfoundland*". The Consumer Advocate also submits that the production of the
2 information should not place an undue burden on Hydro nor detract from an efficient inquiry
3 process.
4

5 The Industrial Customer Group supports the Application and submits that the information being
6 sought by Newfoundland Power relates to the reasonable evaluation of the adequacy and
7 reliability of the Island Interconnected system after interconnection with the Muskrat Falls
8 generating facility and falls within the scope of Phase Two. The Industrial Customer Group
9 further submits that there would not be an undue burden placed on Hydro to provide the
10 information.
11

12 In its reply submission Newfoundland Power submits that the responses to the RFIs do not
13 provide Newfoundland Power with sufficient information to evaluate the reliability of the
14 electricity supply on the island of Newfoundland following the interconnection of Muskrat Falls
15 and do not permit the transparent evaluation of the risks involved. Newfoundland Power suggests
16 that the responses provided actually reduce transparency, pointing to the example of different
17 return periods for ice loadings used for the Labrador Island HVdc Link and the Western Avalon
18 transmission line. In the context of the electrical system events in 2013, 2014 and 2015
19 Newfoundland Power points to Hydro's stated objective of a two-week repair duration for the
20 Labrador Island HVdc, and states that experience has shown that outages of much less than two
21 weeks can cause significant distress for its customers. Newfoundland Power states that, given
22 these circumstances, a full understanding of the transmissions risks associated with supply to the
23 Avalon Peninsula is necessary. Newfoundland Power notes that three of the intervenors support
24 the Application, which indicates that the disclosure sought is consistent with efficient regulatory
25 practice. Newfoundland Power also submits that the disclosure requested in the Application will
26 not create an undue burden on Hydro as it should be readily available and exist in an easily
27 transmittable electronic format.
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30 **Board Findings**

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32 In Order No. P.U. 41(2014), addressing the relevancy of other RFIs filed in this proceeding, the
33 Board stated that the issues in the matter should not be extended to the construction, legal,
34 contractual and physical risks of the Muskrat Falls project. The Board also noted that, while
35 certain concerns in relation to the reliability and adequacy of the Island Interconnected system
36 may involve aspects of the Muskrat Falls project, this proceeding does not involve an evaluation
37 of the project. In addition the Board notes that it was specifically exempted from review of this
38 project and from the regulation of Nalcor which is responsible for this project. The Board stated
39 at page 4:
40

41 *Although an evaluation of the Muskrat Falls Project is not part of this proceeding, the*
42 *Board believes that information which goes to the risks of timely delivery of reliable and*
43 *adequate power to the Island Interconnected system is relevant to the issues in this*
44 *proceeding and should be produced. However, detailed technical information in relation to*
45 *Nalcor's planning and construction of the Muskrat Falls Project, alternative approaches*
46 *which may have been taken, and issues associated with the economic or physical viability*
47 *of the project are not required or relevant in this proceeding. The Board acknowledges*

1 *that it is sometimes difficult to make this distinction and further that some parties may be*
2 *interested in the most detailed information available. Each request for information must be*
3 *considered in all of the circumstances, balancing the interests of full disclosure and*
4 *participation with an efficient process and the potential for undue burden on the parties.*
5

6 Consistent with this approach the Board will address each RFI separately below.
7

8 NP-NLH-004
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10 The Board notes that Hydro provided a 57 page response to NP-NLH-004 which confirms the
11 return periods used for the various climatic design loadings and provides background and
12 clarification on the design criteria for the Labrador Island HVdc Link, including the
13 consideration of design standards and recommended practice, operational experience and
14 identified operational risks. The Board agrees that this information may be helpful to the
15 understanding of the issues under review in Phase Two. Newfoundland Power has requested that
16 the Board order Hydro to provide the additional information sought in the RFI with respect to
17 suspension tower load cases and the supporting mathematical calculations. The Board notes that
18 the requested information relates to work undertaken by Nalcor as part of the Muskrat Falls
19 project and that the Board has specifically been exempted from any oversight of Nalcor and this
20 project. As stated in earlier decisions, the Board's investigation does not contemplate assessment
21 or audit of the technical aspects of the design of the transmission line. The Board's primary
22 concern is with the identification of the risks and consequences to Hydro's supply of reliable and
23 adequate power to the Island Interconnected system after the Muskrat Falls project comes online,
24 and how Hydro plans to mitigate against those risks. The Board is not persuaded that the
25 underlying engineering calculations requested by Newfoundland Power in NP-NLH-004 are
26 within the scope of this review or the Board's jurisdiction. The Board notes that there are further
27 opportunities for the parties to request relevant information and to clarify the information
28 provided to gain a better understanding in relation to the issues which are within the scope of the
29 review. In particular, the concerns raised by Newfoundland Power with respect to the
30 transparency of Hydro's evaluation of the risks and conflicting information can, in the Board's
31 view, be addressed in specific follow up RFIs to Hydro in the second round of information
32 requests.
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34 NP-NLH-005
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36 The information requested by Newfoundland Power in NP-NLH-005 is similar to that requested
37 in NP-NLH-004, except that it relates to the proposed 230 kV transmission line from Bay
38 d'Espoir to Western Avalon. This transmission line is being built by Hydro and not Nalcor and is
39 not part of the exempted Muskrat Falls project. It is therefore subject to the Board's oversight. It
40 is noted that the capital expenditures associated with this transmission line were approved by the
41 Board in Order No. P.U. 53(2014). Hydro filed a three page response to this RFI which provides
42 the return periods used for the various climatic design loadings for this line as well as the
43 corresponding design standard loadings but does not provide the same level of detail that is
44 provided in NP-NLH-004. Hydro explains in its submission that this line will be constructed to
45 Hydro's standard design criteria and that any revisions which may be required to meet the return
46 periods will be considered during the detailed design. The Board finds that, based on the
47 information provided, it is not possible at this time to determine that the information requested is

1 outside of the scope of this proceeding. Further the Board notes that Hydro has not argued that
2 the provision of this information would be burdensome. The Board believes that the requested
3 information may relate to matters which are within the jurisdiction of the Board and that it may
4 relate to issues which fall within the scope of the proceeding. Further the Board accepts the
5 affidavit evidence that was filed which indicates that without the requested information,
6 Newfoundland Power's expert is unable to properly evaluate the degree to which the supply risks
7 have been addressed. The Board will order production of the requested information but with a
8 caution that all parties are careful to remain within the scope of the review.

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10 NP-NLH-018

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12 Newfoundland Power is requesting that Hydro provide a copy of the design specifications of all
13 line components of the Labrador-Island HVdc Link and the proposed 230kv line from Bay
14 d'Espoir to Western Avalon, including tower loads, conductor sag-tensions and any other
15 supporting documents. In its reply Hydro did not provide any information directed to the
16 question, as was the case for NP-NLH-004 and NP-NLH-005, but rather stated that a review of
17 the design specifications and parameters for either project will not inform the matter currently
18 before the Board. The Board notes that this request is not seeking the underlying mathematical
19 calculations but rather a copy of the design specifications for all line components, such as tower
20 loads, conductor sag tensions and any other supporting documents. The information itself
21 appears to be in the same vein as the climatic loading design criteria provided in the above RFIs,
22 which the Board believes may be helpful to the understanding of the issues before it in this
23 proceeding. Hydro has not argued that the production of this information as requested would
24 impose a burden on Hydro or indicated whether it can be provided in a summary form. The
25 Board will not require Hydro to produce the full design specifications and supporting
26 documentation as requested at this time but will direct Hydro to provide an informative response
27 which addresses the specific information identified in the RFI, such as tower loads and conductor
28 sag-tensions.

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31 **IT IS THEREFORE ORDERED THAT:**

- 32
33 1. The application of Newfoundland Power Inc. for a futher response to NP-NLH-004 is
34 hereby denied.
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36 2. Hydro shall provide responses to NP-NLH-005 and NP-NLH-018 in accordance with the
37 findings of the Board in this decision and Order.

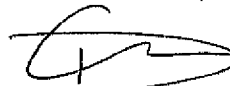
DATED at St. John's, Newfoundland and Labrador this 8th day of May 2015.



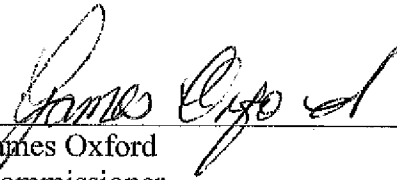
Andy Wells
Chair & Chief Executive Officer



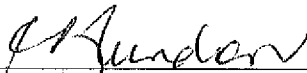
Darlene Whalen, P.Eng.
Vice-Chair



Dwanda Newman, LL.B.
Commissioner



James Oxford
Commissioner



Cheryl Blundon
Board Secretary