

Our File: 115064
November 10, 2016

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The Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road, PO Box 21040
St. John's, Newfoundland & Labrador A1A 5B2

Attention: Ms. Cheryl Blundon
Director of Corporate Services & Board Secretary

Dear Ms. Blundon:

Re: The Board's Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System - Phase 2 – Grand Riverkeeper Labrador, Inc. Expert Reports

We are counsel for Newfoundland and Labrador Hydro ("Hydro"). Hydro is in receipt of three reports filed in the above noted proceeding by the Grand Riverkeeper Labrador, Inc. (the "GRK"):

1. A report dated November 26, 2015, by Dr. S. Bernander entitled "Lower Churchill River Riverbank Stability Report" (the "**First Bernander Report**"). This report was filed in November 2015. Errata, dated October 13, 2016 in respect of this report were also filed with the Board in October 2016.
2. A report dated October 13, 2016, by Dr. S. Bernander entitled "Safety and Reliability of the Muskrat Falls Dam, in Light of the *Engineering Report* of 21 December 2015 by Nalcor/SNC Lavalin (the "**Second Bernander Report**").
3. A report dated October 17, 2016, by Philip Raphals entitled "Muskrat Falls' Contribution to the Reliability of the Island Interconnected System" (the "**Raphals Report**").

The Board has not set a formal motions process to assess the permitted scope of expert evidence. However, having reviewed the above noted reports, Hydro offers the following comments concerning the relevance of the subject matter addressed by each of these documents.

First Bernander Report

The First Bernander Report deals with specific technical issues involving the Churchill River riverbed and the stability of the North Spur.

On December 2, 2015, Hydro, via its counsel, McInnes Cooper, filed with the Board comments in respect of First Bernander Report [**Attachment 1**]. The GRK responded to this letter in correspondence to the Board dated January 25, 2016 [**Attachment 2**].

By email dated January 27, 2016, Board Counsel wrote to the parties indicating the following:

The Board's process does not allow for intervenors to file reports to be placed on the record of the proceeding unless they are entered through a witness at the hearing process or through the submissions of the parties.

Therefore, the report of Dr. Bernander will not be placed on the record at this time. The Board will not be issuing an order in relation to this matter and does not intend to respond to Hydro's correspondence of December 2, 2015.
[Attachment 3]

A copy of this correspondence is enclosed. Hydro notes that the First Bernander Report was not resubmitted during the period of time allowed for the filing of expert reports in October of 2016, although the Errata were submitted within the mandated time period. Hydro seeks the Board's direction as to the current status of this report, having not been resubmitted as required by the Board.

Although the current status of the First Bernander Report is (in Hydro's view) uncertain from a procedural perspective, Hydro's position on this report is the same as noted in its correspondence of December 2015. The subject matter of First Bernander Report will act to complicate the ongoing review and would not be relevant or helpful to the Board in making its final determinations, and would likely delay the proceeding on the merits.

In his January 2016 correspondence, counsel for the GRK cited Order No. P.U. 15(2014) granting the GRK intervenor status in this proceeding as a reason to permit the First Bernander Report, arguing that the Board has indicated its desire to hear "evidence regarding the implications of these risks with respect to IIS reliability" (page 4).

Hydro submits that in granting the GRK intervenor status, the Board did not expand the scope of the inquiry to the specific technical issues pursued by Dr. Bernander in the First Bernander Report. To the contrary, the Board has ruled repeatedly that such issues are to be outside the currently defined scope. In its December 2015 letter, Hydro noted three occasions in which the Board has ruled that a study of the engineering or construction of the Muskrat Falls project is not within the bounds of this inquiry. Since that time the Board has ruled a fourth time, on April 22, 2016, echoing its earlier decisions and stating at page 10 of Order No. P.U. 12(2016): "[t]he Board addressed this issue in Order No. P.U. 14(2014) and found that specific information in relation to the technical issues associated with the North Spur at the Muskrat Falls Project site was beyond the scope of the proceeding."

The Board further stated at page 3 of Order No. P.U. 12(2016):

The Board's position on the Quebec litigation, the relevance of the technical details of the Muskrat Falls Project and the design specifications of the North Spur have been clearly determined and outlined for the parties...The Board's jurisdiction under the Muskrat Falls Project Exemption Order (Regulation 120/3) is constrained and the Board does not have jurisdiction to review the design, engineering, planning, construction, commissioning, ownership, operation, maintenance, management and control of Muskrat Falls. The Board has stated that information which goes to the risk of the timely delivery of reliable and adequate power to the Island Interconnected system is relevant to the investigation and should be produced.

It is Hydro's submission that the First Bernander Report is entirely an "engineering or construction" discussion and squarely within the subject matter of the questions previously asked by the GRK of Hydro¹ that were ruled out of scope in previous Board Orders. Hydro further notes that the Board's own expert, Liberty Consulting Group, was not instructed to deal with these issues in its review,² filed with the Board on August 19, 2016.

The GRK submits that the First Bernander Report addresses the "technical matter only to the extent necessary to assess the risk of failure of the North Spur". As noted in Hydro's letter of December 2015, this issue has already been addressed in GRK-NLH-044 in that a failure of the North Spur is no different from a dam breach or similar catastrophic event. The ultimate result of such an event could be the loss of all or substantially all of the output of Muskrat Falls. Hydro's options in respect of this type of scenario are well documented in the above noted response. Further technical analyses as to the extent of possible risk of failure of the North Spur are neither necessary nor helpful to the issues in this inquiry.

Finally, counsel for the GRK states that "one cannot conclude that the fact that the Board may have rejected a particular RFI concerning the Muskrat Falls project means the evidence touching on the same issue is necessarily inadmissible...filed evidence creates no burden on the parties" (page 8). Hydro submits that the First Bernander Report provides only one perspective on the matter. The burden is with Hydro to respond to it. To allow this report to remain on the record without proper response would provide the Board a one-sided view of the matter and therefore be unhelpful to the process. To allow this report to be considered by the Board without adequate ability to fully reply to its contents would be unfair to all parties with whom expectations of scope have been established by virtue of multiple Orders of the Board. This may force Hydro (and potentially other parties, including the Board) to seek to file expert evidence in response, information which was previously not required of Hydro by virtue of Order No. P.U. 41(2014) and subsequent Board Orders.

Second Bernander Report

The Second Bernander Report is a critical review of a December 21, 2015 engineering report by Nalcor/SNC Lavalin entitled "Engineering Report, North Spur Stabilization Works, Progressive Failure Study" ("**Nalcor 2015 Report**").³

¹ See e.g., RFIs GRK-NLH-042, GRK-NLH-047, GRK-NLH-048, GRK-NLH-049, GRK-NLH-050, and DD-NLH-057.

² GRK-PUB-025.

³ Please note that the Nalcor 2015 Report is not currently part of the record in this inquiry.

For the reasons cited above concerning the First Bernander Report, Hydro submits that this report deals with specific technical analysis of the stability review undertaken by Nalcor/SNC Lavalin. This review of the Nalcor 2015 Report by Dr. Bernander goes directly to design and construction of the Muskrat Falls project and Hydro submits is therefore out of scope of this inquiry.

Raphals Report

The Raphals Report deals with the impact of the recent decision of the Québec Superior Court concerning the renewal provisions of the Churchill Falls power contract.

With respect to the litigation in Québec, the Board has ruled in Order No. P.U. 41(2014) at page 23 that the “consequences regarding the availability of a reliable and adequate supply of power to the Island Interconnected system associated with the risks of the scenarios outlined” may be relevant in the current proceeding. This recent decision of the Québec Superior Court is currently under appeal with the Québec Court of Appeal (Notice of Appeal was filed on September 7, 2016) and so the matter remains under consideration.

In Order No. P.U. 15(2014), the Board considered the difficulties that an in-depth consideration of legal issues could impose upon this inquiry. From this perspective, the Raphals Report gives rise to a number of problems. The Raphals Report is not expert evidence with respect to legal matters. It is heavily premised upon his presumed legal implications of one step of ongoing litigation. Moreover, with due respect to Mr. Raphals, it is trite law that a decision of a court is authority for only those principles and issues that were before it. The Water Management Agreement (established by an Order of this Board, (Order No. P.U. 8(2010)) has not been challenged or appealed and it was not the issue before the Québec Superior Court in the matter referred to by Mr. Raphals.

As stated in Hydro’s response to GRK-NLH-021, Rev. 1, the decision of the Québec Superior Court (and by extension, the Court of Appeal) has no impact on reliability, merely the potential use of resources available to Hydro at any given time to meet system requirements. An exploration of this issue would require a consideration of whether this on-going litigation bears relevance to the issue at hand in this matter. If it was determined to be relevant, it would further require a review of a range of entirely hypothetical scenarios, which could include (a) the potential successful or unsuccessful conclusion to the litigation and (b) the successful or unsuccessful conclusion of any negotiation with Hydro Québec in respect of the matter, along with the implications of each. It would be premature and further complicate this proceeding to entertain the purported potential implications of matters that are not yet resolved before the courts. To the extent any discussion is useful, it is addressed by Hydro’s responses to GRK-NLH-021, Rev. 1 and GRK-NLH-044, which, as previously noted, provides the options available to Hydro. With respect to the answer provided by Hydro to GRK-NLH-021, Rev. 1 the Board stated in Order No. P.U. 12(2016) at page 6:

The Board remains satisfied that the issue of the impact of an unfavorable ruling in the Quebec litigation on the water flows of the Churchill River has been sufficiently addressed and does not require further elaboration.

Relief Sought

In Order No. P.U. 15(2014), the Board stated the following at page 4:

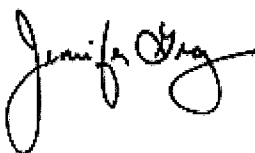
The Board agrees with Newfoundland Power, Hydro and the Consumer Advocate that the issues in the matter should not be extended to the construction, legal, contractual and physical risks of the Muskrat Falls development, as raised by Grand Riverkeeper Labrador, Inc.

...
To ensure an efficient and effective proceeding all parties must respect the parameters and scope of the issues which have been established and must restrict the evidence and submissions filed to matters which may be of assistance to the Board in determining these issues. The investigation and hearing cannot be allowed to be complicated by issues and evidence which are not relevant and helpful to the Board in its determination, To that end the Board will be diligent in ensuring that only matters that are relevant are raised and will exercise its discretion, either on its own or in response to motion from a party, to strike out any matters which are irrelevant or may tend to prejudice, embarrass or delay the proceeding upon its merits.

The content of the GRK expert reports relate to matters that the Board has repeatedly ruled as out of scope of this proceeding. Merely because an expert report is filed does not mean it is either relevant or helpful. If a report is not relevant but permitted to stay on the record, such a situation can only serve to further complicate the matters before the Board, cause undue burden on the parties involved to respond, and further delay proceedings. If these reports are allowed to remain on the record in this inquiry, the parties (including Hydro) will need to consider filing evidence in response, cross-examine such experts and reply to this evidence. This will, of course, place additional pressure on an already complex proceeding.

Hydro respectfully submits that the Board should strike out First Bernander Report, the Second Bernander Report and the Raphals Report in their entirety, for the reasons noted above.

Yours very truly,



Jennifer L Gray

JLG/amh
Enclosures

cc: Gerard Hayes – Newfoundland Power
Dennis Browne, Q.C. – Consumer Advocate
Paul Coxworthy – Stewart McKelvey Stirling Scales
Danny Dumaresque

ecc: Roberta Frampton Benefiel – Grand Riverkeeper Labrador

Attachment 1

***Letter from McInnes Cooper to
The Board of Commissioners of Public
Utilities dated December 2, 2015***

Our File: 115064

December 2, 2015

The Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road, PO Box 21040
St. John's, Newfoundland & Labrador A1A 5B2

Attention: Ms. Cheryl Blundon, Director of Corporate Services & Board Secretary

Dear Ms. Blundon:

Re: The Board's Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System ("Public Review") Phase 2 – Lower Churchill River Riverbank Stability Report filed by the Grand Riverkeeper Labrador, Inc. ("GRK") on November 26, 2015 (the "Bernander Report")

We are counsel for Newfoundland and Labrador Hydro ("Hydro"). Hydro is in receipt of the Bernander Report recently filed by the GRK with the Board. The Board has yet to set a formal schedule for the filing of evidence or comments in Phase 2 of the Public Review with which the Bernander Report is apparently in relation. The GRK has simply filed the Bernander Report with no further comments on its proposed status. Having reviewed the Bernander Report, Hydro has the following comments for consideration by the Board.

The Board has already ruled that detailed technical information in relation to the North Spur is not relevant to the issues in this proceeding. At page 26 of Board Order P.U. 41 (2014) the Board specifically stated that "[t]his proceeding will not involve an analysis of engineering and construction issues associated with the Muskrat Falls Project", and at page 15 "[t]he Board does not believe that it would be relevant or useful in this proceeding to require the production of detailed technical information in relation to the North Spur at the Muskrat Falls development".

In Order P.U. 15 (2014) dealing with the request for Intervenor status made by the Grand Riverkeeper Labrador, Inc. the Board noted at page 4 as follows:

"The Board has determined that it would address adequacy and reliability of the Island Interconnected system following the interconnection with Muskrat Falls. The Board agrees with Newfoundland Power, Hydro and the Consumer Advocate that the issues in the matter should not be extended to the construction, legal, contractual and physical risks of the Muskrat Falls development, as raised by Grand Riverkeeper Labrador, Inc."

The Board then went on at page 4 of that Order to state as follows:

“To ensure an efficient and effective proceeding all parties must respect the parameters and scope of the issues which have been established and must restrict the evidence in submissions filed to matters which may be of assistance to the Board in determining these issues. The investigation and hearing cannot be allowed to be complicated by issues and evidence which are not relevant and helpful to the Board in its determination. To that end the Board will be diligent in ensuring that only matters that are relevant are raised and will exercise its discretion, either on its own or in response to motion from a party, to strike out any matters which are irrelevant or may tend to prejudice, embarrass or delay the proceeding upon its merits.”

Subsequently, in relation to a request by Messrs. Ronald Penney and David Vardy that the Board instruct its consultants to undertake an independent review of the North Spur, the Board ruled by letter dated February 26, 2015 as follows:

“In relation to your request for the Board to instruct its consultants to undertake an independent review of the North Spur, the Board reiterates that this proceeding will not involve a study of the engineering or construction of the Muskrat Falls project. Nalcor and the Muskrat Falls Project have been exempted from the oversight of the Board. The Muskrat Falls Project is relevant in this matter to the extent that it has the potential to impact the reliable and adequate supply of power by Newfoundland and Labrador Hydro on the Island Interconnected system. Whether the North Spur is a risk to the supply of power and, if so, how Hydro has addressed this risk may be an issue but the Board does not believe that it is necessary for purposes of this proceeding to engage its experts to undertake an independent review of the North Spur.”

Hydro submits that the Bernander Report filed by the GRK is exactly the type of information which the Board has already ruled on three prior occasions is not the subject matter of the Public Review. The Report speaks specifically and throughout to geotechnical engineering analysis and the Conclusion section of the Executive Summary (page 3) concludes with a statement “in the opinion of this engineer”. The information presented in the Report is clearly beyond the parameters and scope of the issues for this proceeding which have been repeatedly established by the Board for over a year. The admission of this material into the record will act to complicate the ongoing review, would not be relevant or helpful to the Board in making its final determinations, and would likely delay the proceeding on its merits.


With respect to the Board’s review of system reliability post-Muskrat Falls, Hydro has in its response to GRK-NLH-044 already specifically addressed that matter by describing in detail the options available to Hydro in the very unlikely event of a dam breach at Muskrat Falls. A failure of the North Spur would have a similar impact to a dam breach in that the ultimate result could be the loss of all or substantially all of the output from Muskrat Falls.

Accordingly, as the Board has already ruled well over a year ago that “this proceeding will not involve an analysis of engineering and construction issues associated with the Muskrat Falls Project” and that it “does not believe that it would be relevant or useful in this proceeding to require the production of detailed technical information in relation to the North Spur”, Hydro respectfully requests that the Board confirm that the Bernander Report is beyond the scope of

the ongoing proceeding and shall not form a part of the record in the proceeding. If the Report were to form part of the record of the proceeding, Hydro would then have to consider the need to potentially reply to the Report which would needlessly complicate and confuse the proceeding, particularly in light of the Board's repeated contrary prior orders in this regard. A timely disposition of this matter will allow the proceeding to otherwise continue in an orderly and efficient manner.

We look forward to hearing from the Board in this regard.

Yours very truly,



David S. MacDougall

cc: Interested Parties

Attachment 2

***Letter from GRK to
The Board of Commissioners of Public
Utilities dated January 25, 2016***

IN THE MATTER OF An Investigation And Hearing
Into Supply Issues And Power Outages On The
Island Interconnected System.

**REPLY TO HYDRO'S MOTION TO STRIKE THE EXPERT REPORT FILED OF DR. STIG BERNANDER FILED BY
GRK**

**Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road, P.O. Box 21040
St. John's, NL
A1A 562**

**ATTENTION: Ms. Cheryl Blundon
Director of Corporate Services & Board Secretary**

January 25, 2016

1. Introduction

On November 26, 2015, GRK filed a report by Dr. Stig Bernander, entitled *Lower Churchill River Riverbank Stability Report* (the "Bernander Report"), as part of its evidence in the present proceeding.

In a letter dated December 2, 2015, NLH requests that the Board find the Bernander report to be beyond the scope of the present proceeding, and asks that it be excluded from the record.

The *prima facie* relevance of the Bernander Report to these proceedings is evident from its content and conclusions:

Landslide Risk at the North Spur. The soil masses behind the riverbank slopes of the Churchill River have exerted their vertical pressures for millennia. And yet, as explained in this report, it is when even moderate changes of lateral loading [sideways pressure] take place — such as hydraulic pressure change, seismic activity, gradually failing lateral support, or creep deformations — that the propensity to liquefaction and the resulting loss of shear resistance can occur, releasing enormous landslides of the kind at Edward Island a few years ago.

To reduce or eliminate landslide risk at the dam, NALCOR intends to install a cut-off wall — a

watertight membrane — to help stabilize the upstream slope of the North Spur. This would, of course, be advantageous for increasing the effective pressure on granular soil layers that truly abide by the normal laws of frictional resistance.

However, the behaviour of a mixed soil with *lean clay content* may be totally different, as will be shown in Section 2. Reduced porosity caused by additional shear deformation may result in liquefaction and instability — and in this case the shear deformation and resulting loss of shear resistance may in turn generate a tendency to liquefaction along the entire length of a potential failure surface, resulting in a condition of *global progressive failure*.

In fact, considering the type of sensitive behaviour of the lean Upper Clay No. 2 in the North Spur, the local concentration of hydraulic pressure at the proposed cut-off wall may even create a highly disadvantageous condition. Critically, local concentrated loading is the most common and most effective *triggering agent* in the development of extensive progressive landslides, i.e. slides extending more than 70 to 100 metres.

Conclusion. The contention of this document is not that the North Spur dam containment is bound to fail. Yet, considering the enormous threat to populated areas that would result from a breakage of the North Spur ridge, all stability analyses related to the impoundment must prove that the possibility of such a failure has been definitely excluded.

In the opinion of this engineer, not all of the relevant and appropriate analyses have yet been carried out with robust favorable results. Thus a catastrophic landslide on the North Spur of the Muskrat Falls dam must still be treated as a possible, foreseeable event.

There can be no doubt that a catastrophic landslide on the North Spur of the Muskrat Falls dam would have dramatic and long-term implications for reliability of the Island electric system. As Hydro has denied the existence of such a risk, the Bernander report is not only within the parameters of what the Board has determined to be relevant to these proceedings but also **necessary** to allow the Board to fulfill its mandate. This issue will be addressed in detail in the following section.

The present Response therefore sets out to demonstrate: : (i) That the Bernander Report falls squarely within the parameters of what the Board has determined to be relevant to these proceedings and; (ii) That the Bernander Report constitutes a Reply to an assertion made by counsel for NLH, to the effect that the risk of such an event is negligible.

It is noteworthy that either of these legal bases alone justifies inclusion of the Bernander Report in these proceedings.

2. The Board's mandate

In Schedule A to P.U. 3 (2014), the Board defined its mandate in the present proceeding. It indicated that the Investigation and Hearing Issues would include the following:

II. Final Report

...

2. Evaluation of Island Interconnected system adequacy and reliability up to and after the interconnection with the Muskrat Falls generating facility

- ...
- Asset management strategies for generation and transmission assets, including maintenance of the Holyrood plant and the gas turbines
- ...
- 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 interconnection¹

It was later determined that these issues would be addressed in Phase II of the present proceeding.

3. The relevance of Muskrat Falls

In a number of past orders, the Board has addressed the relevance of the Muskrat Falls project with respect to these Issues. In the following sections, we will review these statements in greater detail. This exercise will demonstrate that, in fact, the Bernander report falls squarely within the zone of relevance previously defined by the Board.

Hydro's letter quotes the first and third paragraphs of page 4 of P.U. 15(2014), including the statement that "the issues in this matter should not be extended to the construction, legal, contractual and physical risks of the Muskrat Falls development". However, it omits to quote the second paragraph, which states:

The Board notes that Grand Riverkeeper Labrador, Inc.'s reply submission states its intent is to ensure that the Board's review of the adequacy and reliability of the system after commissioning of the Muskrat Falls generating facility and the Labrador Island Link takes into account the various risks associated with the unavailability of some or all of the planned energy and capacity from Muskrat Falls. The Board is satisfied that this stated interest may fall within the issues to be addressed in this investigation and hearing and that Grand Riverkeeper Labrador, Inc. should be granted intervenor status on this basis.

Thus, the Board found that the "various risks associated with the unavailability of some or all of the planned energy and capacity from Muskrat Falls... may fall within the issues to be addressed in this investigation and hearing ..."

GRK had made clear in its submissions that these risks included those related to the North Spur, as in the

¹ Unless otherwise indicated, underlining in citations in this document indicates added emphasis.

following passage, quoted by the Board on page 2 of its Order:

We are concerned about many aspects of the construction of the Project, as well as the impacts after construction is complete, impacts that would include but are not limited to, risks, which we believe Nalcor has not thus far acknowledged, that include legal and contractual risks, and risks to the physical integrity of the dams and the North Spur natural dam.

These risks could entail the unavailability for the Island of some or all the planned energy and capacity from Muskrat Falls, over the short, medium or long term. GRK believes that these risks are material in evaluating the adequacy and reliability of the Island Interconnected system after the interconnection with the Muskrat Falls generating facility, and it intends, through its participation in this hearing, to present evidence with respect to these risks.

Thus, the Board's reference to the "various risks associated with the unavailability of some or all of the planned energy and capacity from Muskrat Falls," which it "is satisfied ... may fall within the issues to be addressed in this investigation and hearing ..." clearly includes risks related to the North Spur.

In granting GRK's request for intervenor status, the Board indicated its openness to hearing evidence regarding the implications of these risks with respect to IIS reliability. The Bernander report constitutes an important element in defining those risks.

This is not the first time that NLH has failed to properly characterize the Board's order granted intervenor status to GRK. In its submission regarding GRK's application for interim costs, Hydro attacked GRK's interest in the present proceeding. As GRK noted at page 4 of its Reply re Interim Cost Award, filed on July 9, 2015:

"GRK respectfully submits that this is in fact a tardy and disguised appeal of the Board's decision to grant intervenor status to GRK in the present proceeding, and should be disregarded."

The irony, of course, is that while Hydro again wrongfully accuses GRK of ignoring the Board's previous decisions, it is Hydro that is again attempting to do so. The Bernander Report clearly falls within the subject matter recognized by the Board when granting GRK intervenor status. NLH opted not to appeal that decision. They are now barred by "issue estoppel" and "laches" from doing so.² One cannot do indirectly what one has opted not to do directly, and a party must act in a timely manner.

The Board stated its understanding of the question most clearly in its letter of February 26, 2015 concerning the request by Messrs. Penney and Vardy, where the Board wrote:

² Issue estoppel is explained by Lord Diplock of the House of Lords in *Hunter v Chief Constable of the West Midlands Police* (1982):

This case] concerns the inherent power which any court of justice must possess to prevent misuse of its procedure in a way which, although not inconsistent with the literal application of its procedural rules, would nevertheless be manifestly unfair to a party to litigation before it, or would otherwise bring the administration of justice into disrepute among right-thinking people.

See also *Henderson v Henderson* (1843) 3 Hare 100, 67 ER 313.

The Muskrat Falls project is relevant in this matter to the extent that it has the potential to impact the reliable and adequate supply of power by NLH on the IIS.

This clear and unambiguous statement demonstrates that the Muskrat Falls project is relevant to this inquiry **insofar as it affects reliability on the IIS**. There can be little doubt that, were the dam to collapse due to the structural weakness of the North Spur, the effects on IIS reliability would be dramatic. Therefore, expert evidence that demonstrates a significant risk of this occurring, as does the Bernander report, is unequivocally relevant to the present inquiry.

4. The Board's decisions regarding GRK's RFIs concerning the North Spur

On the first page of its December 2 letter, Hydro cites passages from pages 15 and 26 of P.U. 41(2014), in which the Board states that it will not require production of detailed technical information regarding the North Spur. This is the same argument that Hydro made in its submissions leading up to P.U. 41(2014):

Hydro states in its submission that these requests pertain to alleged construction and physical risks of the Muskrat Falls Project which the Board ruled in Order No. P.U. 15(2014) are not relevant to the review of system reliability and are therefore outside of the scope of the present inquiry. (page 26)

However, the Board was only partially persuaded by this argument. It went on to quote GRK's perspective:

Grand Riverkeeper Labrador, Inc. argues that the Board has not excluded these issues from the inquiry and states at page 7:

More specifically, it is stated that taking into account the various risks associated with the unavailability of some or all of the planned energy and capacity from Muskrat Falls- which certainly include any identified risks to the physical integrity of the plant - falls within the issues to be addressed in this investigation and hearing.

The Board first acknowledged Hydro's point, with respect to GRK-NLH-42, and 47 to 50, which requested detailed technical information:

The Board believes that the detailed technical information in relation to the North Spur of the Muskrat Falls Project sought in GRK-NLH-42, and 47 to 50 is not relevant to the issues in this proceeding. This proceeding will not involve an analysis of engineering and construction issues associated with the Muskrat Falls Project ..."

This last phrase is quoted in Hydro's December 2 letter, but the rest of the sentence is not:

... but rather will address whether Hydro has secured a reliable and adequate supply of

power for the Island Interconnected system and has fully addressed any risks to this supply.

The Board then goes on to conclude that, while requests for specific technical information are beyond the scope of this proceeding, **“to the extent that the information sought may relate to issues associated with the risks to the adequate and reliable supply on the Island Interconnected system and how these risks have been addressed, this information may be relevant.”** (emphasis added)

It therefore rejected Hydro’s motion with respect to GRK-NLH-43 to 46, and ordered it to respond to these RFIs, “direct[ing] its response to the risks and consequences to the Island Interconnected system of the scenarios and issues raised.”

Similarly, on page 27, the Board rejected Hydro’s motion with respect to GRK NLH-55 and 57, because they may be **“relevant to the issue of assessment of risk,”** and that Hydro must respond to these RFIs “to the extent that the responses can address the consequences regarding the availability of a reliable and adequate supply of power to the Island Interconnected system”.

Subsequent to P.U. 41(2014), GRK filed an additional motion requesting complete responses to several of its RFIs. In P.U. 5(2015), the Board found in favor of GRK with respect to GRK-NLH-045, 046 and 057, writing as follows (at page 4):

In Order No. P.U. 41(2014) the Board found that GRK-NLH-45 and 46 seek very specific information in relation to the technical issues associated with the North Spur which is beyond the scope of the investigation but, to the extent that the information sought may relate to issues associated with the risks to the adequate and reliable supply on the Island Interconnected system and how these risks have been addressed, this information may be relevant. The Board clarified that it was not necessary for Hydro to provide detailed technical information or reports related to engineering and construction issues but rather should direct its responses to the risks and consequences to the Island Interconnected system of the scenarios and issues raised. In relation to GRK-NLH-57 the Board found that the requested information may be relevant to the issue of assessment of risk and that the response should address the consequences regarding the availability of a reliable and adequate supply of power to the Island Interconnected system. The Board agrees with Grand Riverkeeper Labrador, Inc. and the Consumer Advocate that Hydro should provide further information in relation to these requests. The Board accepts the motion of Grand Riverkeeper Labrador, Inc. in relation to GRK-NLH- 45, 46 and 57.

Read as a whole, these passages provide clear indication of the Board’s judgement with regard to the relevance of issues related to the North Spur in the present proceeding. The Board considers the issue to be relevant, insofar as it speaks to the “assessment of risk” with regard to “the availability of

a reliable and adequate supply of power to the Island Interconnected system". At the same time, it has declined to order the production of technical engineering data, even if such data might contribute to the analysis of said risks.

The Bernander Report addressed technical matter only to the extent necessary to assess the risk of failure of the North Spur, and hence of the Muskrat Falls project as a whole, which would have an undeniable impact on the availability of a reliable and adequate supply of power to the Island Interconnected system.

Furthermore, it is important to recognize that the criteria to be applied for refusing to order a response to an RFI and those for striking evidence are not identical. In July 2014, Hydro filed a motion regarding certain RFIs filed by GRK, in which it stated:

Hydro respectfully submits that the Requests for Information noted above are beyond the parameters and scope of the issues which have been established by the Board and the requirement to provided [sic] responses to those Requests for Information will act to complicate the hearing and would not be relevant or helpful to the Board in making its final determination.³

In its Order, the Board wrote, at page 4:

The use of requests for information is accepted practice for the Board and, with few exceptions, the Board's procedures provide for direct filing of requests for information to a party. Issues of relevance, usefulness or information availability related to specific requests are dealt with on objection or motion from the responding party. The Board expects that intervenors will only ask questions that are relevant and that the responding party will strive to answer all questions fully and adequately. However, efficient regulatory process sometimes requires the Board to rule on whether certain information requests should be struck on the basis that they may be considered to be outside the scope of the proceeding or that the costs and time associated with the production of the information are not in line with the potential usefulness of the information to be produced. Often the value or usefulness of certain information to the Board in a matter is difficult to assess in the absence of the production of the information.

The Board then wrote:

The investigation and hearing into supply issues and power outages will address adequacy and reliability of the Island Interconnected system and involves Newfoundland and Labrador Hydro and Newfoundland Power, as the two utilities which operate this system. This proceeding raises issues which are of great public interest and import in relation to the planning and operation to the long term power supply in the province. The Board notes that there is a particular interest in information surrounding the Muskrat Falls Project. While certain concerns in relation to the reliability and adequacy of the Island Interconnected system may involve aspects of the Muskrat

³ Order P.U. 41(2014), at page 1.

Falls Project this proceeding does not involve an evaluation of the Muskrat Falls Project. The Board was specifically exempted from review of this project and from the regulation of Nalcor which is responsible for this project.

Although an evaluation of the Muskrat Falls Project is not part of this proceeding, the Board believes that information which goes to the risks of timely delivery of reliable and adequate power to the Island Interconnected system is relevant to the issues in this proceeding and should be produced. However, detailed technical information in relation to Nalcor's planning and construction of the Muskrat Falls Project, alternative approaches which may have been taken, and issues associated with the economic or physical viability of the project are not required or relevant in this proceeding. The Board acknowledges that it is sometimes difficult to make this distinction and further that some parties may be interested in the most detailed information available. Each request for information must be considered in all of the circumstances, balancing the interests of full disclosure and participation with an efficient process and the potential for undue burden on the parties.

In light of these observations, one cannot conclude that the fact that the Board may have rejected a particular RFI concerning the Muskrat Falls project means that evidence touching on the same issue is necessarily inadmissible. Unlike an RFI seeking technical documentation, filed evidence creates no burden on the parties.

GRK respectfully submits that, given the prima facie relevance of the issues addressed in the Bernander Report to this proceeding, it would be manifestly unjust and unfair to exclude this expert evidence without hearing it. The Board should rather hear the evidence and then make its own judgement as to the report's probative value.

5. In asserting that the probability of failure of the North Spur is negligible, Hydro has created a right to reply

As demonstrated above, the Bernander Report falls clearly within the zone of relevance it delineated in the decision allowing GRK to intervene in these proceedings, as well as numerous other decisions concerning RFIs.

Furthermore, counsel for Hydro essentially asserted that there is no risk of collapse of the North Spur.

In its letter dated January 14, 2014, Hydro's attorney wrote, at page 5:

Hydro notes that the Muskrat Falls dam is being designed similar to all other Hydro dam facilities so that the probability of risk of failure is negligible.

Hydro quoted this same passage in its letter of January 19, 2014, and added, at page 2:

A failure of the North Spur would have a similar impact to a dam breach in that the ultimate result could be the loss of all or substantially all of the output from Muskrat Falls.

GRK prayed acte of these assertions in its amended reply, dated January 22, 2015, regarding its motion to order complete responses for requests for information.

In P.U. 13(2015), at page 7, the Board wrote:

The Board's primary concern is with the identification of the risks and consequences to Hydro's supply of reliable and adequate power to the Island Interconnected system after the Muskrat Falls project comes online, and how Hydro plans to mitigate against those risks.

Hydro has affirmed in its responses to GRK-NLH-098, -099 and -100 that the risk of failure of the Muskrat Falls dam is negligible, and hence there is no need to mitigate against such a risk. It has further indicated (GRK-NLH-066, Rev. 1) that it has no worst-case planning estimate for an outage from the MF-LITL of more than two weeks.

The Bernander report provides expert rebuttal of these affirmations. While Dr. Bernander was unfortunately unable to precisely quantify the risk of failure of the North Spur, due to the unavailability of the required geotechnical data, his report leaves no doubt that there is a real risk of catastrophic failure of the dam. GRK will show in additional evidence, that, should such a failure occur, the loss of power from Muskrat Falls would likely be total and permanent.

GRK understands that, given the Muskrat Falls Exemption Order, the Board's jurisdiction in this regard is highly constrained. However, these questions go to the heart of the subject matter of the present inquiry, "the identification of the risks and consequences to Hydro's supply of reliable and adequate power to the Island Interconnected system after the Muskrat Falls project comes online." The Board thus cannot avoid deciding whether to accept or reject Hydro's affirmation that the probability of failure of the North Spur is negligible.

In GRK-NLH-098, Hydro wrote:

The design principles for dam engineering design are sufficiently conservative that, consistent with all of Hydro's water retaining structures, the probability of an outage resulting from a dam failure to be used in a reliability study is negligible.

In GRK-NLH-099, Hydro was asked:

On what basis was it determined that "a potential dam breach at Muskrat Falls [is] very unlikely"? Please provide all supporting documentation leading to this conclusion.

And in GRK-NLH-100, Hydro was asked:

On what basis was it determined that "the probability of risk of failure is negligible"? Please provide all supporting documentation leading to this conclusion.

Hydro provided a single response to the two RFIs, which reads:

The determination is based on Hydro's understanding of the principles associated with the

engineering design of large-scale dams. See also Hydro's response to GRK-NLH-098. ...
(emphasis added)

The response to GRK-NLH-098 states:

The design principles for dam engineering design are sufficiently conservative that, consistent with all of Hydro's water retaining structures, the probability of an outage resulting from a dam failure to be used in a reliability study is negligible.

In effect, Hydro is saying that, because the dam was designed according to the same principles and methods as all other dams, it cannot fail. However, some dams have in fact failed upon impoundment – the Grand Teton Dam in the United States being the most famous example – with substantial loss of money and life.⁴ Another important dam failure, the 2015 failure of the tailings dam at the Mt. Polley Mine in British Columbia, was found by a Review Panel to be due to design flaws related to the foundation.⁵

At the end of the day, the Board will have to decide whether or not the Island Interconnected System must maintain readiness for a scenario involving failure of the Muskrat Falls dam. If it concludes that Hydro's zero-probability assessment is correct, it may well decide to authorize the eventual decommissioning of Holyrood. If not, and is no other back-up plan can be designed, such decommissioning may be impossible. This is without doubt one of the key questions before the Board in this proceeding, and the relevance to it of the Bernander Report cannot be denied.

It has confirmed that it has not examined any scenarios with an outage on the LIL longer than two weeks:

For the reasons discussed in detail in Hydro's response to PUB-NLH-299, Hydro concluded “the two-week repair duration objective was selected as reasonable for the development of restoration plans”. Hydro confirms that it does not have a worst-case planning estimate in excess of two weeks for the situation in question. (GRK-NLH-066, Rev. 1)

Hydro provided an analysis demonstrating its ability to withstand a two-week outage in GRK-NLH-069, Rev. 1:

A review of the average hydrology for the 1 Hydro island hydro-electric generation indicates

⁴ According to the U.S. Department of the Interior (Bureau of Reclamation), the Teton Dam suddenly failed on first filling of the reservoir in 1976, resulting in the loss of 11 lives and millions of dollars in property damage. <http://www.usbr.gov/pn/about/Teton.html>

⁵ “The design did not take into account the complexity of the sub-glacial and pre-glacial geological environment associated with the perimeter embankment foundation.” Mount Polley Review Panel Delivers Final Report, Media Release, Friday, January 30, 2015. <https://www.mountpolleyreviewpanel.ca/mount-polley-review-panel-delivers-final-report>

that there would be in excess of 1400 GWh of storage in the hydro reservoirs. Using hourly data from Hydro's Energy Management System, an hourly load shape for the worst-case two-week outage window in the year 2025 was developed. A typical hydro-electric dispatch to follow the load pattern for the two week outage was found to result in generation of 262.3 GWh of energy. Operating the hydro-electric generation at the maximum level for the entire two-week outage period is found to result in an 87.2 GWh increase in energy production. Given the storage position in the reservoirs, there is no issue with operating the hydro generation continuously at maximum output for a two-week LIL outage. On average, in excess of 1,400 GWh of energy would be in storage in Hydro's on-island reservoirs. Assuming no inflows (which is a conservative assumption), 1,400 GWh is sufficient to generate 1,000 MW for a period of approximately two months. (Note 2: $[1,400 \text{ GWh} * 1,000 \text{ MWh/GWh}] / 1,000 \text{ MW} = 1,400 \text{ hours}$ $[1,400 \text{ hr} / 24 \text{ hr/day} / 30 \text{ days/month}] = 1.94 \text{ months}$, or approximately 2 months). As further demonstrated in Hydro's response to GRK-NLH-074, Hydro would have sufficient energy resources from both on-island hydro, the Maritime Link and standby thermal resources to supply full load.

In GRK-NLH-074, Rev. 1, Hydro stated that it would have sufficient energy resources to meet load throughout the year, apparently through 2025.

In the unlikely event of a sustained bipole outage on the Labrador-Island Link (LIL), Hydro would have sufficient energy resources to replace the energy supplied over the LIL and thus supply full load throughout the year.

Table 1 shows the maximum energy that the island system is expected to receive over the LIL in the 2018 to 2025 period by month (28 to 31 days). The result shows that there is more than sufficient energy capability from other non-hydraulic sources to replace the energy that would have come from the LIL, in case of a bipole outage for any month from 2018 to 2025. As shown in the table, these other sources will not be required to operate at high capacity factors, thus indicating additional reserves are there if required.

However, no indication is provided as to what would happen should a long-term or permanent outage occur after 2025, nor is it clear how commitments to Nova Scotia could be met under these circumstances.

GRK respectfully submits that, for all these reasons, the question of the possibility or likelihood of failure of the Muskrat Falls dam is directly relevant to Phase II of this Inquiry. Hydro indicates, at page 3 of its December 22 letter, that, should the Board deny its motion to exclude the Bernander report from the record, it would "have to consider the need to potentially reply to the Report".

GRK respectfully submits that such a response would indeed be useful, in order to help the Board decide whether or not the stability of the North Spur represents, or not, a real risk "to Hydro's supply of reliable and adequate power to the Island Interconnected system after the Muskrat Falls project comes online."

Jurisprudence concerning the Right of Reply:

Moravian Church of Newfoundland and Labrador vs. Newfoundland and Labrador 2005 NLTD 123, paragraphs 40-43, relying on *Snell v. Farrell* (1990), 72 D.L.R. (4th) 489 SCC Justice Sopinka relates the burden of proof in civil matters to broad reasons of experience and fairness. Where the subject matter of the allegation lies particularly within the knowledge of one party, that party may be required to prove it. Nonetheless, *prima facie* evidence from the opposing party is obviously relevant to indicate that the threshold burden has not been met. As noted at para. 42 “it is not unreasonable to require the [Defendant] in such circumstances to disclose his particular basis of knowledge and to bear the burden of proof in so doing.”

The right to reply is addressed in the following cases:

Merck-Frosst v. Minister of Health 2009 FC 914 at para. 10:

[10] In considering the motion to file reply evidence, the Prothonotary correctly set out the relevant test as enunciated in *Pfizer Canada v. Canada (Minister of Health)*, [2007 FC 506 \(CanLII\)](#), *Eli Lilly Canada v. Apotex Inc.*, [2006 FC 953 \(CanLII\)](#), and other decisions of this Court. The test has four components as follows:

- (i) whether the further evidence serves the interests of justice;
- (ii) whether the further evidence assists the Court in making its determination on the merits;
- (iii) whether granting the motion will cause substantial or serious prejudice to the other side; and
- (iv) whether the reply evidence was available and/or could not be anticipated as being relevant at an earlier date.

Dow Chemical co. vs. Nova Chemicals 2012 FC 754 applied this test as concerns expert evidence.⁶

Vernon vs. the Queen BCSC 1688 at para. 12 held that counsel statements constitute evidence.⁷

Other forms of evidence have been held to include statements of counsel: *Fomo Products v. Solkan Enterprises Ltd.* (1986) 4 B..C.L.R. (2ND) 264 (C.A.).

The right to reply (or refute) *prima facie* evidence adduced by the moving party was recognized in *Celtic Business Development Corporation vs. Arsenault* 2010 NLTD 121 at paras. 25: “It is only logical that if a Defendant wishes to refute the plaintiff’s evidence that the defendant call evidence which contradicts that of the plaintiff.... The defendant’s evidentiary burden does not detract from the plaintiff’s burden to prove its case.”

Consequently, for all the reasons referred to herein, GRK respectfully requests the Board to deny

⁶ See also *Lockridge vs. Ministry of the Environment* 2013 ONSC 6935.

⁷ This is in particular the case here as GRK *prayed acte* of these assertions.

Hydro's Motion to exclude the Bernander report from the record of this proceeding.

Respectfully submitted,

Charles O'Brien

Attachment 3

***Email Exchange between Jacqui Glynn
of The Board of Commissioners of Public
Utilities and Charles O'Brien of GRK***

Gray, Jennifer

From: GYoung@nlh.nl.ca
Sent: January 28, 2016 10:53 AM
To: MacDougall, David
Subject: Fw: Phase 2 - Response to Motion for complete responses
Attachments: pic17958.jpg

(Embedded image moved to Geoffrey P. Young
file: pic17958.jpg) Senior Legal Counsel
Newfoundland and Labrador Hydro - a Nalcor Energy company
t. 709 737-1277 f. 709 737 1782
e. GYoung@nlh.nl.ca
w. www.nlh.nl.ca

----- Forwarded by Geoff Young/NLHydro on 01/28/2016 11:22 AM -----

From: Jacqui Glynn <jglynn@pub.nl.ca>
To: "Charles O'Brien" <bluegreenlaw@gmail.com>, "GYoung@nlh.nl.ca"
<GYoung@nlh.nl.ca>
Cc: Cheryl Blundon <cblundon@pub.nl.ca>, NL Public Utilities Board
<ito@pub.nl.ca>
Date: 01/27/2016 10:02 AM
Subject: Phase 2 - Response to Motion for complete responses

Good morning Charles,

The Board was expecting a reply to Hydro's comments on your motion for complete responses dated November 26, 2015, not a reply to Hydro's correspondence of December 2, 2015. Please advise if you will be filing a reply to Hydro comments on your motion and if so, on what date.

The Board's process does not allow for intervenors to file reports to be placed on the record of the proceeding unless they are entered through a witness at the hearing process or through the submissions of the parties. Therefore, the report of Dr. Bernander will not be placed on the record at this time. The Board will not be issuing an order in relation to this matter and does not intend to respond to Hydro's correspondence of December 2, 2015.

Regards,
Jacqui Glynn
Legal Counsel

From: Charles O'Brien [<mailto:bluegreenlaw@gmail.com>]
Sent: January-12-16 2:02 PM
To: Jacqui Glynn
Cc: Cheryl Blundon
Subject: Re: Phase 2 - Response to Motion on or before January 25th

Good afternoon Jacqui:
We are in the process of preparing a Response and expect it will be filed on or before January 25, 2016.
Yours very truly,
Charles O'Brien

On 12 January 2016 at 08:38, Jacqui Glynn <jglynn@pub.nl.ca> wrote:
Good morning Charles,

On December 23, 2015 Hydro filed a reply submission to Grand Riverkeeper's Motion from Complete Responses dated November 26, 2015. Please advise if you wish to file a response to Hydro's reply.

Regards,
Jacqui

Legal Counsel
Board of Commissioners of Public Utilities