

BY EMAIL AND MAIL

February 2, 2017

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

RE: The Board's Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System – Motion to rescind or amend P.U. 2(2017)

Ladies and Gentlemen:

On January 20, 2017, the PUB issued Order P.U. 2(2017) (“the Order”), granting Hydro’s motion to strike the two Bernander reports dated November 26, 2015 and October 13, 2016, and the Raphals report dated October 17, 2016, from the record of this proceeding.

According to s. 76 PUA, the Board may rescind, alter or amend an order made by the Board:

76. The board may upon notice to the public utility and after hearing as provided in this Act, by order rescind, alter or amend an order fixing rates, tolls, charges or schedules, or other order made by the board, and certified copies of the order shall be served and take effect as provided in this Act for original orders.

Section 28(1) of the PUB’s Regulations provides:

28. (1) Applications for re-opening an application after final submission, or for rehearing after final order, must state the grounds upon which the application is based if the application to re-open the matter to receive further evidence, the nature and purpose of the evidence must be stated if the application is for a rehearing or argument, the applicant must state the findings of fact or of law claimed to be erroneous and a brief statement of the alleged error. (underlining added)

GRK respectfully submits that the Order contains errors in fact and law, as set out below.

In accordance with s. 76 of the PUA and s. 28(1) of the Regulations, GRK hereby respectfully requests the Board to rescind or amend Order P.U. 2(2017), as further set out below.

The Order has two parts, dealing with the Bernander reports and the Raphals report. We will address them in sequence.

The Bernander Reports

On page 4 of the Order, the first three paragraphs of the section “Board Findings” refer to the Bernander reports, and conclude that they will be struck from the record.

More specifically, the Order states (at page 4, lines 11-21):

The Board finds that the information and opinion set out in the Bernander reports would not be useful for the Board in its determinations relating to the adequacy and reliability of the Island Interconnected system. The First Bernander Report is a technical discussion of the North Spur stability addressing issues including the soil properties of the Churchill River Valley, the applicability of standard soil investigations, the tendency to liquefaction, stability analysis issues, and Nalcor’s approach in relation to the North Spur. This report does not address adequacy or reliability of the Island Interconnected system. The report states:

The intent of this Report is to explain the extraordinary features of the Churchill River Valley, and to comment on North Spur stability regarding the proposed future impoundment.⁴ (underlining added)

With regard to the Second Bernander Report, the Board also finds (page 4, lines 25-27):

This report goes directly to the engineering, design and construction of the Muskrat Falls project but does not address adequacy or capacity on the Island Interconnected system. (underlining added)

While the Board’s statement that these reports do “not address adequacy or reliability of the Island Interconnected system” is literally true, this does not mean that they are not *relevant* to the examination of the adequacy or reliability of the Island Interconnected system after interconnection. The executive summary of the first Bernander report concludes:

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

This statement directly contradicts a statement made by Hydro in response to an RFI:

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.¹ (underlining added)

¹ GRK-NLH-060 rev. 1, page 5 of 5.

However, this evidentiary statement has yet to be tested through cross-examination, and hence has, at this stage, no more probative value than the expert report that contradicts it.

Bernander's second report states (at page 1):

Hence it is this Reviewer's assessment that safety factors based on this stress-strain model, including those offered in the Report, are not well founded and cannot be accepted without further supporting evidence. The inevitable conclusion is that the safety and reliability of the Muskrat Falls dam have not been demonstrated. (underlining added)

It goes on to state (at page 2):

In view of the catastrophe that would envelop downstream communities in the event of a breach in the North Spur, these issues deserve the most careful scrutiny and decisive action by those entrusted with leadership of the Project. Until and unless they are satisfactorily resolved, the reliability of the Muskrat Falls generating station in meeting the electrical needs of Newfoundland cannot be presumed. (underlining added)

Thus, these expert reports include specific conclusions with regard to the reliability of the Muskrat Falls Generating Station (MFGS). Following interconnection, the MFGS will obviously constitute an important if not critical element of the Island Integrated System (IIS). The precise consequences for IIS reliability of a failure of the North Spur and consequent loss of the entire generating capacity of the MFGS is an issue on which some evidence has already been provided, and on which GRK intends to provide additional evidence during the Phase 2 hearings. The fact that Dr. Bernander's reports do not draw specific conclusions in this regard is thus of no particular significance. Rather, the fact that they are *relevant* to this important question means that they are *a priori* relevant and hence admissible in this public hearing process.

To the best of our knowledge, this is the first dam in the world to include as part of the primary retaining structure a natural dam including quick or sensitive clays. Failure of the North Spur would lead not merely to delays, costs or reduced performance, but also to an instantaneous and probably permanent loss of the full capacity of the MF Project.

Hydro claims in its (as yet untested) written evidence that the reliability implications in the event that of a failure would be manageable, until 2025. It however makes no such claim should the failure occur at a later date, when the IIS will be more fully reliant on the MFGS.

Like Hydro's statement that the risk is "negligeable", the probative value of the Bernander reports cannot be evaluated at this stage, and the Order rightly refrains from drawing any conclusions as to the validity of Bernander's conclusions. However, it erred in finding that the reports do not address adequacy or reliability of the Island Interconnected system, given that their conclusions bear directly on these central issues.

Furthermore, in so doing, it deprived GRK of its right to be heard with respect to these issues, as will be discussed below.

The Raphals report

With respect to the Raphals report, the Board cites evidence provided by Hydro (GRK-NLH-021, rev. 1, and GRK-NLH-093), as well as its earlier rulings concerning requests for information (P.U. 12(2016)) and concerning GRK's petition for intervenor status (P.U. 15(2014)). Its finding is as follows:

The Board has reviewed the Raphals Report and finds that it primarily relates to issues which have been found to be outside of the scope of this review, specifically the legal, contractual and physical risks of the Muskrat Falls development. In particular, the report addresses the physical characteristics and inflows of the Muskrat Falls generating station, the role of the water management agreement and the Quebec Superior Court decision. The report concludes based on an analysis of these issues that the capacity balances presented by Hydro systematically overstate available firm capacity but does not provide analysis which addresses impacts on the reliability of the Island Interconnected system. The Board notes that the evidence filed by Hydro confirms that an unfavorable ruling in the Quebec litigation may have an impact on the manner in which water will flow from the Churchill Falls plant and the timing of energy produced at Muskrat Falls. Further Hydro's evidence provides that while an unfavorable judgement may impact how Hydro utilizes the available resources it would not impact Island Interconnected system reliability. The Board concludes that the information contained in the Raphals Report is substantially outside of the scope of the review and would not add to the Board's understanding of the issues or assist the Board in its review and may serve to unduly complicate the review. The Raphals Report will be struck from the record of this review. (underlining added)

This summary presents several areas in which the Raphals report and Hydro's evidence appear to be in contradiction with each other. For instance, it states that "Raphals concludes that the capacity balances presented by Hydro systematically overstate available firm capacity."² While Raphals does not explicitly so state, it is self-evident – and GRK will demonstrate this point in its testimony at the hearing – that a shortfall of 400 MW could have significant reliability implications for the IIS. Thus, his conclusion directly contradicts Hydro's statement that "an unfavorable judgement (...) would not impact Island Interconnected system reliability."

Furthermore, in acknowledging that the Quebec ruling "may have an impact on the manner in which water will flow from the Churchill Falls plant" and on "the timing of energy produced at Muskrat Falls", Hydro indirectly acknowledges that the ruling could affect the MFGS' ability to serve IIS peak demand — the amount of energy that can be

² The Raphals report, at p. 27, indicates that Hydro overstates the available firm capacity from the MFGS by up to 400 MW.

relied upon to produce *at the time when it is most needed by the IIS*. The Raphals report fleshes out and explores in detail the reality behind this vague statement made by Hydro.

Hydro then goes on to state, in the same sentence, that the change in “the timing of energy produced at Muskrat Falls” “would not impact IIS reliability”. As noted before, Hydro’s responses to RFIs constitute prefiled testimony the correctness and veracity of which have not yet been tested through cross-examination in a public hearing. At this stage, this statement, provided without any supporting data or explanation, cannot be accorded any probative value.

At this point in the proceedings, both Hydro’s statement and the Raphals report are untested evidence. It is an error in law to rely on untested evidence to exclude other evidence, especially considering that the excluded evidence is a closely reasoned text, based on data from reliable sources.

Allowing the exclusion of all evidence that is contradicted by answers to RFI would lead to absurd results, depriving the hearing process of all relevance. Rather, evidence should only be excluded at this stage if it is irrelevant to the subject of the investigation, which the Raphals report is not.

It will be up to the Board to determine — after hearing evidence from all parties, including GRK — the weight to be given to each piece of evidence, and their implications for IIS reliability. To strike this evidence before it has been heard thus causes prejudice to the Board’s capacity to make fact-based judgements concerning the adequacy and reliability of the IIS after interconnection.

Right to be heard

In its request for intervenor status in this proceeding, GRK wrote:

GRK intends to present evidence concerning the contractual uncertainties related to the Water Management Agreement, and their implications with respect to the operations of the Muskrat Falls plant after commissioning. GRK also intends to present evidence concerning the physical risks related to the North Spur natural dam.

This is precisely what it has done.

In P.U. 15(2014), the Board wrote:

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.

The Board thus found that GRK's intent to take into account "the various risks associated with the unavailability of some or all of the planned energy and capacity from Muskrat Falls" — referring specifically to the risks associated with the North Spur and the WMA — "may fall within the issues to be addressed in this investigation".

The Board has not, to date, made a finding that these risks are negligible, or that they would not affect "the adequacy and reliability of the system after commissioning of the Muskrat Falls generating facility and the Labrador Island Link".

GRK notes that three other experts, including the Board's expert Liberty Consulting Group, have submitted reports dealing in detail with technical matters which were not identified by the Board as subjects of this hearing. The reports are:

- Sections III and IV of the Phase 2 report prepared by Liberty Consulting Group for the Board, which address technical aspects of the Labrador-Island Link, the Maritime Link, and the Muskrat Falls HVdc system;
- The report prepared by Commonwealth Associates for the Consumer Advocate, which addresses "the structural and mechanical risks to the reliability of electrical transmission systems serving the eastern portion of the island of Newfoundland" after interconnection; and
- The report prepared by Elias Ghannoum for Newfoundland Power, concerning the reliability of the overhead transmission line portion of the LIL.

The admissibility of these reports has not been challenged, although they, like the Bernander and Raphals reports, deal with technical matters that directly affect IIS reliability. As the intent of the Board surely was not to unduly discriminate against GRK's evidence, this discrepancy in the treatment of comparable evidence may only be explained as an error of fact in the Board's appreciation that the reports do not address adequacy or reliability of the Island Interconnected system.

GRK also respectfully submits that the Board order, if not rescinded or amended, would leave the Board in an untenable position with respect to the final phase of the present proceeding.

In the absence of the Raphals report, the Board will have no alternative but to take Hydro's claim of 824 MW of available capacity from MF at face value. It will draw conclusions based on that value concerning the need for additional resources in order to ensure adequacy and reliability for the IIS after interconnection.

If Raphals is correct, that assessment would overstate available supply by several hundred megawatts. In relying on an erroneous estimate of MFGS available firm capacity, the Board would be condemning the IIS to a highly uncertain future. It should

be recalled that, according to the Board's own report in Phase I of this proceeding, the DarkNL events were caused by a capacity shortfall of much lesser magnitude.

GRK is cognizant of the pressing issues before the Board with respect to IIS reliability prior to interconnection, and has no desire to complicate this proceeding. However, the issues that motivated GRK's request to intervene and that were deemed relevant by the Board when it allowed GRK to intervene will eventually have to be addressed, and the Board will then need to rely on relevant and credible evidence, such as the reports the Order wrongfully excluded.

The formulation adopted by the Board with respect to both the Bernander reports and the Raphals report is identical. It states that "The Board concludes that the information contained in [the report(s)] is substantially outside of the scope of the review and would not add to the Board's understanding of the issues or assist the Board in its review and may serve to unduly complicate the review" (page 4, lines 34-37 and page 6, lines 4-7).

GRK respectfully submits that, while the *information* contained in the reports may fall outside of the scope set out by the Board in its earlier orders, the *conclusions* of the reports, based on that information, are profoundly relevant to the issues before the Board in this proceeding. With respect, it is hard to see how these reports could not "add to the Board's understanding of the issues or assist the Board in its review," unless the Board has already drawn conclusions based on Hydro's superficial and untested evidence, which would itself constitute an error in law.

Finally, GRK wishes to emphasize that it has no desire to unduly complicate the Board's review. It is however of the view that, should the Board attempt to reach conclusions regarding IIS reliability in the post-interconnection period based on the unsupported affirmations cited in the Order, its analysis will inevitably remain incomplete and its conclusions unreliable.

Remedy sought

GRK respectfully submits that Order P.U. 2(2017) should be rescinded.

In the alternative, it should be amended to suspend judgment until after hearing the witnesses' testimony.

Respectfully submitted,



Prunelle Thibault-Bédard

Counsel for Grand Riverkeeper Labrador Inc.