IN THE MATTER OF the *Public Utilities Act*, RSN 1990, Chapter P-47 (the "Act"): and

IN THE MATTER OF a General Rate Application (the Application) by Newfoundland and Labrador Hydro for approvals of, under Section 70 of the Act, changes in the rates to be charged for the supply of power and energy to Newfoundland Power, Rural Customers and Industrial Customers; and under Section 71 of the Act, changes in the Rules and Regulations applicable to the supply of electricity to Rural Customers.

IN THE MATTER OF the *Electrical Power Control Act*, 1994, SNL 1994, Chapter E-5.1 (The "EPCA") And The Public Utilities Act, RSNL 1990, Chapter P-47 (The "Act"), As Amended; And

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

REQUESTS FOR INFORMATION

THE NEWFOUNDLAND AND LABRADOR PUBLIC UTILITIES BOARD

GRK-NLH-93 to GRK-NLH-100

GRAND RIVERKEEPER LABRADOR INC. (GRK)

Issued January 21, 2015

GRK-NLH-93

Re: GRK-NLH-021 (Rev. 1)

Citation 1 (GRK-NLH-021 (Rev. 1)):

> If Nalcor's interpretation of the renewal of the Churchill Falls Contract is not upheld, then depending on the finding of the court and the response by Hydro Quebec to such finding, the manner in which water will flow down the Churchill River from the Churchill Falls plant and thus the timing of when energy is produced at Muskrat Falls could be impacted. It could therefore impact the degree which Hydro can influence the timing of delivery of energy to the Island Interconnected System to maximize the efficient use of the water resources it has control over. This would not impact system reliability but could impact how Hydro utilizes the resources available to it at any given time to meet system requirements. Hydro would evaluate the circumstances arising at the relevant time and run its system accordingly. Please refer to Hydro's response to GRK-NLH-044 for options available to Hydro. (underlining added)

Citation 2 (Water Management Agreement, s. 6.3 (a)(i):

> 6.3 Limitation on Powers
>
> (a) The parties acknowledge and agree that the following shall exceed the powers and duties of the Independent Coordinator:
>
> > (i) Scheduling CF(L)Co production for Nalcor, to the extent that such production conflicts with CF(L)Co's obligations under Prior Power Contracts; and …

Please explain in what way "the manner in which water will flow down the Churchill River from the Churchill Falls plant … could be impacted" if Nalcor's interpretation of the renewal of the Churchill Falls Contract is not upheld, and describe in detail the ways in which this could affect "the timing of when energy is produced at Muskrat Falls".

In your response, please indicate whether or not NLH has carried out or received copy of any specific analysis of to the extent to which the Hydro-Quebec's interpretation of the Churchill Falls Power Contract, as set out in its filings before the Quebec Superior Court, would limit the Independent Coordinator's ability to respect NLH's Delivery Requirements with respect to s. 6.3(a) of the WMA (Citation 2).

If so, please provide a copy of said analysis. If not, please explain on what basis NLH has been able to conclude that "this would not impact system reliability".

GRK-NLH-94

Re: GRK-NLH-021 (Rev. 1)

Citation (GRK-NLH-021 (Rev. 1)):

> If Nalcor's interpretation of the renewal of the Churchill Falls Contract is not upheld, then depending on the finding of the court and the response by Hydro Quebec to such finding, the

manner in which water will flow down the Churchill River from the Churchill Falls plant and thus the timing of when energy is produced at Muskrat Falls could be impacted. It could therefore impact the degree which Hydro can influence the timing of delivery of energy to the Island Interconnected System to maximize the efficient use of the water resources it has control over. This would not impact system reliability but could impact how Hydro utilizes the resources available to it at any given time to meet system requirements. Hydro would evaluate the circumstances arising at the relevant time and run its system accordingly. Please refer to Hydro's response to GRK-NLH-044 for options available to Hydro. (underlining added)

Citation 2 (Order P.U. 3 (2014), Schedule A (Investigation and Hearing Issues), page 2

II. FINAL REPORT

…

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

…

- **Back-up generation and/or alternative supply requirements after interconnection**
- **Other system planning, capital and operational issues which may impact system adequacy and reliability before and after interconnection**

Preamble: The underlined passage in Citation 1 appears to suggest that Hydro sees no need to determine in advance the degree to which an adverse court ruling might affect its ability to have its production schedules met.

Please confirm or correct the statement in the Preamble, taking into account the issues to be addressed in this proceeding as indicated in Citation 2.

GRK-NLH-95

Re: GRK-NLH-044

Citation:

In the (very) unlikely event of a dam breach at Muskrat Falls, several options are available to Hydro. As stated in Hydro's response to GRK-NLH-004: "Upon the completion of the Labrador-Island Link and the Maritime Link, the Island of Newfoundland will, for the first time, have access to electricity from neighbouring utilities. … These transmission interconnections will, if necessary, enable the Energy Control Centre operators to utilize emergency support from neighbouring utilities and to obtain power through electricity market arrangements either through the Quebec or Maritime Link interconnections." (underlining added)

Please list and describe agreements currently in place or under discussion to provide "emergency support" from neighbouring utilities via the LITL and the Maritime Link, indicating for each:

- any limitations on capacity and energy available,
- any limitations in terms of the duration for which “emergency support” can be counted upon, and
- the costs or other financial implications related to relying on “emergency support”.

GRK-NLH-96

Re: GRK-NLH-044

Citation:

> In the (very) unlikely event of a dam breach at Muskrat Falls, several options are available to Hydro. As stated in Hydro's response to GRK-NLH-004: "Upon the completion of the Labrador-Island Link and the Maritime Link, the Island of Newfoundland will, for the first time, have access to electricity from neighbouring utilities. … These transmission interconnections will, if necessary, enable the Energy Control Centre operators to utilize emergency support from neighbouring utilities and to obtain power through electricity market arrangements either through the Quebec or Maritime Link interconnections."
>
> In addition, with a continued 60 MW interruptible arrangement, Hydro will have sufficient installed capacity to supply full load until at least 2025. Beyond the 1650 MW load level, there are options available to supplement capacity that Hydro will explore including:
>
> - Additional industrial and commercial interruptible load arrangements;
> - Customer demand side management initiatives;
> - Additional imports via the Maritime Link when existing constraints in the Maritime/New England systems are mitigated; and
> - Potential on-Island capacity additions. (underlining added)

Please provide detailed worksheets demonstrating that, “with a continued 60 MW interruptible arrangement, Hydro will have sufficient installed capacity to supply full load until at least 2025”. Is this based on a P50 or P90 estimate of future loads?

GRK-NLH-97

Re: GRK-NLH-044

Citation:

> In the (very) unlikely event of a dam breach at Muskrat Falls, several options are available to Hydro. As stated in Hydro's response to GRK-NLH-004: "Upon the completion of the Labrador-Island Link and the Maritime Link, the Island of Newfoundland will, for the first time, have access to electricity from neighbouring utilities. … These transmission interconnections will, if necessary, enable the Energy Control Centre operators to utilize emergency support from neighbouring utilities and to

obtain power through electricity market arrangements either through the Quebec or Maritime Link interconnections."

In addition, with a continued 60 MW interruptible arrangement, Hydro will have sufficient installed capacity to supply full load until at least 2025. Beyond the 1650 MW load level, there are options available to supplement capacity that Hydro will explore including:

- Additional industrial and commercial interruptible load arrangements;
- Customer demand side management initiatives;
- Additional imports via the Maritime Link when existing constraints in the Maritime/New England systems are mitigated; and
- Potential on-Island capacity additions.

(underlining added)

Preamble: The measures described here, in relation to a dam breach at Muskrat Falls, are also referred to in GRK-NLH-021 (Rev.1) as available in the event that Nalcor's interpretation of the renewal of the Churchill Falls Contract is not upheld.

Please elaborate on the likely availability, cost and lead times of the options described. In particular, please elaborate on:

- The degree and extent to which additional industrial and commercial interruptible load arrangements can be relied upon, taking into account experiences of other utilities in this regard;
- The expected limits of customer demand side management initiatives, given NLH's and NP's experience to date in this field;
- Any constraints of all types limiting access to imports over the Maritime Link;
- Any constraints limiting of all types access to imports over the LITL; and
- The types, locations lead times and costs of the potential on-Island capacity additions to which reference is made.

GRK-NLH-98

Re: NLH Reply to GRK Motion to Order more Complete Responses (Jan. 14), p. 5

Citation:

Regarding the 2nd bullet, in its response Hydro referred, as noted by the GRK in its Supplemental Motion, to Order P.U. 41's statement that it would not be relevant or useful in this proceeding to require the production of detailed technical information in relation to physical risks associated with the Muskrat Falls development and then cross referenced to Hydro's response to GRK-NLH-044. As noted above, Hydro's response to GRK-NLH-044 specifically describes in detail the options available to Hydro in the very unlikely event of a dam breach at Muskrat Falls. Other than to consider a potential dam breach at Muskrat Falls to be

very unlikely, Hydro has not assigned a forced outage probability to "events concerning the integrity of the MF reservoir". Hydro likewise does not assign a forced outage probability to catastrophic events concerning the integrity of any of its dams. 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.

Preamble: The last sentence is ambiguous. It could be interpreted to mean either:

a) Hydro notes that the Muskrat Falls dam is being designed similar to all other Hydro dam facilities ~~so that~~ and therefore the probability of risk of failure is negligible; or
b) Hydro notes that the Muskrat Falls dam is being designed, like ~~similar to~~ all other Hydro dam facilities, such ~~so~~ that the probability of risk of failure is negligible.

Please indicate which of the two possible meanings of the last sentence of the Citation is correct. If neither is correct, please clarify the meaning of this sentence.

Please confirm that Hydro does not assign a forced outage probability of zero to catastrophic events concerning the integrity of its dams.

GRK-NLH-99

Re: NLH Reply to GRK Motion to Order more Complete Responses (Jan. 14), p. 5

Citation:

Regarding the 2nd bullet, in its response Hydro referred, as noted by the GRK in its Supplemental Motion, to Order P.U. 41's statement that it would not be relevant or useful in this proceeding to require the production of detailed technical information in relation to physical risks associated with the Muskrat Falls development and then cross referenced to Hydro's response to GRK-NLH-044. As noted above, Hydro's response to GRK-NLH-044 specifically describes in detail the options available to Hydro in the very unlikely event of a dam breach at Muskrat Falls. Other than to consider a potential dam breach at Muskrat Falls to be very unlikely, Hydro has not assigned a forced outage probability to "events concerning the integrity of the MF reservoir". Hydro likewise does not assign a forced outage probability to catastrophic events concerning the integrity of any of its dams. 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. (underlining added)

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.

GRK-NLH-100

Re: NLH Reply to GRK Motion to Order more Complete Responses (Jan. 14), p. 5

Citation:

> Regarding the 2nd bullet, in its response Hydro referred, as noted by the GRK in its Supplemental Motion, to Order P.U. 41's statement that it would not be relevant or useful in this proceeding to require the production of detailed technical information in relation to physical risks associated with the Muskrat Falls development and then cross referenced to Hydro's response to GRK-NLH-044. As noted above, Hydro's response to GRK-NLH-044 specifically describes in detail the options available to Hydro in the very unlikely event of a dam breach at Muskrat Falls. Other than to consider a potential dam breach at Muskrat Falls to be very unlikely, Hydro has not assigned a forced outage probability to "events concerning the integrity of the MF reservoir". Hydro likewise does not assign a forced outage probability to catastrophic events concerning the integrity of any of its dams. 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. (underlining added)

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

DATED at Montreal, in the Province of Quebec, this 21st day of January, 2015.

Charles O'Brien

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