



NEWFOUNDLAND AND LABRADOR
BOARD OF COMMISSIONERS OF PUBLIC UTILITIES
120 Torbay Road, P.O. Box 21040, St. John's, Newfoundland and Labrador, Canada, A1A 5B2

E-mail: TraceyPennell@nlh.nl.ca

2016-06-16

Ms. Tracey Pennell
Senior Counsel
Newfoundland and Labrador Hydro
P.O. Box 12400
St. John's, NL A1B 4K7

Dear Ms. Pennell:

Re: Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System – Phase Two - Requests for Information PUB-NLH-595 to PUB-NLH-614 (Energy Supply Risk Assessment Report) and PUB-NLH-615 to PUB-NLH-623 (Teshmont Report)

Enclosed are Requests for Information (RFIs) PUB-NLH-595 to PUB-NLH-614 in relation to Energy Supply Risk Assessment Report and PUB-NLH-615 to PUB-NLH-623 in relation to the Teshmont Report regarding the above-noted matter. The deadline for Responses to these RFIs will be set at a later time.

If you have any questions, please do not hesitate to contact the Board's Legal Counsel, Ms. Jacqui Glynn, by email, jglynn@pub.nl.ca or telephone (709) 726-6781.

Yours truly,

Sara Kean
Assistant Board Secretary

cpj

Enclosure

ecc. **Newfoundland and Labrador Hydro**
NLH Regulatory, E-mail: NLHRegulatory@nlh.nl.ca
Mr. Geoff Young, E-mail: GYoung@nlh.nl.ca
Consumer Advocate
Mr. Thomas Johnson, QC, E-mail: tjohnson@odeaearle.ca
Ms. Colleen Lacey, E-mail: clacey@odeaearle.ca
Mr. Raman Balakrishnan, E-mail: rbalakrishnan@odeaearl.ca
Island Industrial Customer Group
Mr. Paul Coxworthy, E-mail: pcoxworthy@stewartmckelvey.com
Mr. Dean Porter, E-mail: dporter@poolealthouse.ca
Vale Newfoundland and Labrador Limited
Mr. Denis Fleming, E-mail: dfleming@coxandpalmer.com

Newfoundland Power Inc.
Mr. Gerard Hayes, E-mail: ghayes@newfoundlandpower.com
Mr. Ian Kelly, QC, E-mail: ikelly@curtisdawe.com
Grand Riverkeeper® Labrador Inc.
Ms. Roberta Frampton Benefiel, E-Mail: rebfnl@gmail.com
Mr. Charles O'Brien, E-mail: E-mail:bluegreenlaw@gmail.com
Mr. Philip Raphals, E-mail: Philip@centrehelios.org
Mr. Danny Dumaresque
Mr. Danny Dumaresque, E-mail: danny.liberal@gmail.com
Mr. William Kennedy, E-mail: wkennedy@kennedylawoffice.ca

1 **IN THE MATTER OF**
2 the *Electrical Power Control Act, 1994*,
3 SNL 1994, Chapter E-5.1 (the “*EPCA*”)
4 and the *Public Utilities Act, RSNL 1990*,
5 Chapter P-47 (the “*Act*”), as amended; and
6
7 **IN THE MATTER OF** the Board’s Investigation
8 and Hearing into Supply Issues and Power Outages
9 on the Island Interconnected System.

**PUBLIC UTILITIES BOARD
REQUESTS FOR INFORMATION**

PUB-NLH-595 to PUB-NLH-623

Issued: June 16, 2016

1 **2015–2019 Energy Supply Risk Assessment Report**

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PUB-NLH-595 Why did Hydro use Expected Unserved Energy instead of Hydro's previously standard measures (LOLH and % reserves available) in this report?

PUB-NLH-596 Please show the corresponding MW reserves for each analysis shown in the report expressed in absolute MW and in %.

PUB-NLH-597 Please provide the status of discussions on additional interruptible load, the potential added capacity Hydro believes may be feasible, and the timetable for firming up customer agreements.

PUB-NLH-598 Please refer to Table 2 on page 13 of the Energy Supply Risk Assessment Report. Hydro's forecast of the peak for winter 2016/17 is reduced substantially from its June 2015 forecast (1,789 MW) to its April 2016 "base case" (1,733 MW). Please explain in detail the reasons for this 56 MW drop in the forecast.

PUB-NLH-599 When will an updated forecast be available, as the one Hydro gave regarding the implications of the provincial economic outlook was expressed as tentative?

PUB-NLH-600 Please provide the specific reasons for Hydro's decision to reduce the ratings of the Holyrood units, including all associated studies and reports. In the response provide the "analysis and recommendations from Hydro's Asset Management team" relating to Holyrood de-rates, as noted on page 18, line 19 of the Energy Supply Risk Assessment Report, the analysis referred to in the response to PUB-NLH-009, lines 7 to 9 in the Replacement of the Lower Reheater Boiler Tubes Application and any reports or analysis from the AMEC NSS completed in 2016 as also referred to in the response to PUB-NLH-009. Also include any of the external reports or analysis including the results of any tests of failed boiler tubes in the last five years.

PUB-NLH-601 Please provide, for each Holyrood unit for each year 1995-2015, the number of boiler tube failures and the operating hours.

PUB-NLH-602 Hydro is making significant investment in the Holyrood boilers this year, yet the Energy Supply Assessment Report includes an assumption of continuing de-rating following repairs. Please explain the basis for the continued de-rating and if the planned investments are expected to solve this issue.

PUB-NLH-603 Please explain why the Holyrood de-rates extend to emergency situations.

- 1 **PUB-NLH-604** Hydro previously experienced boiler complications due to fuel quality,
2 including high sulphur and vanadium. Please describe the connection, if
3 any, between past fuel quality issues and present boiler issues.
4
- 5 **PUB-NLH-605** In 2011, AMEC concluded that *“there is no reason why the [Holyrood]
6 plant cannot continue to generate electricity reliably to the year 2020”*.
7 AMEC added *“There are several pre-requisites to this, including
8 continued and enhanced inspection and maintenance programs, planned
9 major equipment refurbishment such as generator stator and rotor
10 rewinds, controls and alarms upgrades, and switchgear and breaker
11 refurbishments and replacements.”* Please explain how Hydro fulfilled
12 the “pre-requisites” identified by AMEC.
13
- 14 **PUB-NLH-606** Further to PUB-NLH-605, did AMEC make any significant
15 recommendations concerning the boilers at Holyrood in the 2011 report or
16 any subsequent report? If yes, what were the recommendations?
17
- 18 **PUB-NLH-607** On page 1, line 14 of the Energy Supply Risk Assessment Report, Hydro
19 states that one intent of the report is to “analyze the reliability of Hydro’s
20 existing thermal generating assets”. While the report provides results for
21 different assumptions regarding thermal unit reliability, it does not provide
22 any analyses, such as estimates of what the reliability of the Holyrood
23 units is expected to be. Please provide Hydro’s best estimate of DAFOR
24 for Holyrood for the period 2016 to 2021 and provide the analyses
25 supporting the estimate.
26
- 27 **PUB-NLH-608** Please provide Hydro’s estimate of UFOP for Hardwoods and
28 Stephenville gas turbines used in the Energy Supply Risk Assessment
29 Report for the period 2016 - 2021.
30
- 31 **PUB-NLH-609** When did Hydro first determine that TL 267 can play a substantial role in
32 mitigating supply risk?
33
- 34 **PUB-NLH-610** Please explain why plans for TL 267 including the request for approval to
35 the Board, did not consider supply risk mitigation; why the line was not
36 considered in prior analyses of supply risk; and why the target date for the
37 project was tied to the Labrador Island Link in-service date and not supply
38 risk mitigation.
39
- 40 **PUB-NLH-611** Please describe the specific steps Hydro is taking to advance the in-service
41 date for TL 267 and the likelihood that the one-year advancement can be
42 achieved.
43
- 44 **PUB-NLH-612** On page 9, line 13 of the Energy Supply Risk Assessment Report, Hydro
45 discusses refined protocols and rigorous guidelines “for managing the
46 electric system and adverse events.” Please provide copies of such

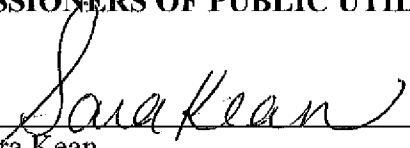
- 1 guidelines and the dates upon which they became, or will become,
2 effective.
- 3
- 4 **PUB-NLH-613** In seeking to mitigate pre-Muskrat Falls supply risks, please describe the
5 extent to which Hydro has considered imports over the Maritime Link and
6 use of recall power over the Labrador Island Link. In the response please
7 explain any efforts taken or planned by Hydro to firm up such potential
8 sources.
- 9
- 10 **PUB-NLH-614** Please provide additional sensitivities until 2021 with (1) the CTs at
11 Hardwoods and Stephenville remaining at half capacity; (2) imports over
12 Maritime Link and Labrador Island Link; and (3) Muskrat Falls delayed
13 by an additional year.
- 14
- 15 **Teshmont Report**
- 16
- 17 **PUB-NLH-615** The Teshmont report seems to have been finalized in late 2014, with only
18 minor changes since. Is data used by Teshmont consistent with Hydro's
19 current assumptions? If not, please explain the differences.
- 20
- 21 **PUB-NLH-616** Hydro states in Section 5.0 that "Teshmont's analysis provides validation
22 of Hydro's assumed HVdc reliability and availability parameters".
23 However, comparing the original information provided in the response to
24 PUB-NLH-212, Attachment 2, Table 3-2 (bipole outages), and the data
25 used by Teshmont, it can be seen that Teshmont used the original data,
26 rather than the subsequent data that was provided in GRK-NLH-060,
27 Revision 1. The most significant difference between the two sets of data is
28 the overall bipole outage rate, which has been reduced from 0.7078/year to
29 0.3278/year. Please clarify.
- 30
- 31 **PUB-NLH-617** Teshmont carried out studies for the network and generation immediately
32 before and after the introduction of Labrador Island Link ("LIL") and
33 Maritime Link ("ML") and assuming the shutdown of Holyrood after their
34 introduction. The study assumed peak load conditions. The reserve in the
35 Island Interconnected System for the first study was a total of 195MW and
36 for the second study 418.8 MW (see Table 23). Table 23 shows that of the
37 418.8MW reserve, 373 MW would be at zero output. The Teshmont study
38 states that in the event of a bipole trip of LIL, with ML in service and able
39 to provide 300 MW support to the Island Interconnected system, the
40 Expected Unserved Energy ("EUE") would be 200kWh. If imports from
41 ML are not available, then the EUE would increase to 2.72GWh; i.e.
42 10,000 times higher. How quickly could the reserve generation at zero
43 output be brought on-line and up to rated output?
- 44
- 45 **PUB-NLH-618** Further to PUB-NLH-617, please confirm that Hydro would expect that
46 underfrequency load shedding would operate to protect the Island

- 1 Interconnected system. If this is confirmed, please estimate the worst case
2 load that would be shed.
- 3
- 4 **PUB-NLH-619** Further to PUB-NLH-617, please describe the actions that the Island
5 Interconnected system operator has to take in order to re-instate the loads
6 which have been shed including how long would these actions take and
7 whether the re-instatement of the loads would wait until all generation has
8 been brought on line, or would loads be connected gradually, as
9 generation becomes available.
- 10
- 11 **PUB-NLH-620** Further to PUB-NLH-617, Hydro does not have an agreement in place
12 with Nova Scotia and New Brunswick in respect of the provision of
13 emergency power support. However, assuming that 157 MW was being
14 delivered to Nova Scotia before the bipole outage, and that 300 MW could
15 be made available for Island Interconnected system, please provide an
16 estimate of the time that a responsible network operator would require to
17 re-organise the generation and network settings, before the Maritime Link
18 could start to ramp up power delivery to the Island Interconnected system.
- 19
- 20 **PUB-NLH-621** Further to PUB-NLH-620, please also provide an answer to question if
21 there were no exports to Nova Scotia at the time of the bipole fault. Please
22 also answer the question for the case in which there were 300 MW going
23 to Nova Scotia at the time of the fault.
- 24
- 25 **PUB-NLH-622** Further to PUB-NLH-617, does Hydro agree with Teshmont's estimate of
26 the Expected Unserved Energy value?
- 27
- 28 **PUB-NLH-623** Further to PUB-NLH-617, the post HVDC study was done for 2018, and
29 Hydro is forecasting that the Island Interconnected system load will
30 increase over the next years. According to the responses to PUB-NLH-542
31 and PUB-NLH-543, Hydro is not expecting to add any additional
32 generation until 2024, unless it is decided not to rely on power imports
33 from Maritime Link to cover peak loads in the event of a bipole outage, in
34 which case power generation would be added when the Holyrood power
35 generation plant is retired. Please describe the general change to
36 Teshmont's results if the study had been carried out immediately before
37 the next planned addition of generation.

DATED at St. John's, Newfoundland this 16th day of June 2016.

BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

Per


Sara Kean

Assistant Board Secretary