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September 3, 2015

Via Electronic Mail & Courier

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

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

Dear Ms. Blundon:

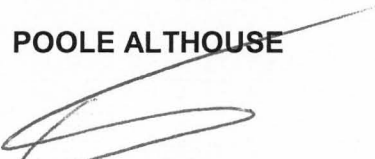
Re: Newfoundland and Labrador Hydro 2013 Amended General Rate Application
Pre-filed Evidence of Mr. Larry Marks

Please find enclosed the original and twelve (12) copies of the Pre-filed Evidence of Mr. Larry Marks. We confirm that a CV from Mr. Marks will follow.

We trust you find the foregoing satisfactory.

Yours very truly,

POOLE ALTHOUSE



Dean A. Porter

DAP/lp
Enclosure

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cc: Mr. Geoffrey P. Young, Senior Legal Counsel, Newfoundland and Labrador Hydro
Mr. Thomas J. Johnson, Consumer Advocate
Mr. Gerard Hayes, Newfoundland Power
Mr. Paul Coxworthy, Stewart McKelvey
Mr. Thomas J. O'Reilly, Q.C., Vale Newfoundland and Labrador Limited
Ms. Nancy Kleer, Olthuis, Kleer, Townshend LLP
Mr. Ed Hearn, Q.C., Miller & Hearn

Ms. Yvonne Jones, MP, House of Commons
Mr. Dennis Browne, Q.C., Browne Fitzgerald Morgan & Avis
Ms. Genevieve Dawson

PRE-FILED TESTIMONY OF
LARRY MARKS
IN REGARD TO FREQUENCY CONVERTER
IN REGARD TO NEWFOUNDLAND & LABRADOR HYDRO
2013 AMENDED GENERAL RATE APPLICATION

Submitted to:

The Board of Commissioners of Public Utilities

on behalf of

Corner Brook Pulp and Paper Limited

September 3, 2015

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1 **1.0 INTRODUCTION**

2 My name is Larry Marks, and I am the Manager for Deer Lake Power and the Manager for Power
3 and Energy at Corner Brook Pulp and Paper (CBPP). I have held this position since approximately
4 2007 and I have been involved with the energy operations at the Mill in Corner Brook since that
5 time.

6 My evidence addresses the proposal by Hydro to raise the annual cost paid by Corner Brook for
7 the services of the Frequency Converter.

8 **2.0 ROLE OF THE FREQUENCY CONVERTER**

9 The Corner Brook frequency converter is a 1960s vintage machine owned and operated by Hydro.
10 The machine provides critical service to CBPP and to the power grid overall by allowing substantial
11 generation at Deer Lake which is produced at 50 Hz to be used to serve loads on the 60 Hz side
12 of the converter.

13 When the frequency converter is available, a portion of the 50 Hz generation can be turned into
14 60 Hz power, which can be used for powering CBPP's 60 Hz equipment, or to supplement Hydro's
15 own supplies (such as in times of supply shortages).

16 When 50 Hz generation cannot be converted, either CBPP will be unable to operate or the CBPP
17 load on Hydro's system would be much higher (which drives more purchases for CBPP, more load
18 for Hydro, and more Holyrood fuel consumed to serve all loads).

19 At times when the frequency converter is limited in its maximum capacity below the nameplate
20 of approximately 25 MW, the 50 Hz Deer Lake output can be constrained to lower value uses, or
21 wasted (depending on the water conditions at the time).

22 **3.0 HISTORY OF CBPP PAYMENTS**

23 It is my understanding that CBPP has always relied upon the frequency converter since it was
24 installed in the late 1960s. Until the early 2000s, this was a part of the overall system and paid
25 for in everybody's rates. At that time (about 2002), Hydro changed the system so that CBPP was
26 required to pay for the frequency converter themselves. CBPP was not supportive of the change,
27 as (1) the company had been provided guarantees that the converter would be provided
28 permanently at Hydro's own cost, and (2) the converter was essential to providing the entire 60
29 Hz system with the benefit of the output of CBPP's Deer Lake 50 Hz units - without the converter
30 Hydro would have had to supply much more 60 Hz power from Holyrood at a much higher cost
31 to all ratepayers.

32 The 2002 annual cost of the frequency converter to CBPP was \$91,000 per year. At that time,
33 CBPP was a larger operation, purchasing approximately 500 GW.h from Hydro. While every cost
34 increase is of concern to CBPP, the cost at that time was relatively small compared to the CBPP
35 operation.

1 By 2006 the cost of the converter had increased to \$347,000 per year, the same amount CBPP
2 pays today. CBPP was still purchasing approximately 400 GW.h per year from Hydro, so the
3 frequency converter costs remained a small part of CBPP's bill.

4 Today, the CBPP operation and load is much smaller (45 GW.h, or about 1/10 the size of
5 purchases from Hydro as in the past GRAs). Hydro is proposing to increase the annual cost for
6 the frequency converter to \$891,000, almost a 10 times increase since 2002. In comparison to
7 CBPP's power purchases of about \$3 million per year at the current rates, the frequency converter
8 will be almost 25% of what CBPP pays Hydro each year. This is a major cost pressure that is very
9 difficult for CBPP to absorb.

10 While CBPP has been paying the Specifically Assigned Charge since the early 2000s, CBPP was
11 not under any impression that the charge would grow from less than 1% of our bill to 25% of
12 our total bill (and growing), and it seems unlikely that the PUB or anyone else at that time
13 expected this result. It is CBPP's view that this change of scale drives the need for a
14 reconsideration of the decisions made to directly assign the asset.

15 **4.0 CONDITION OF THE FREQUENCY CONVERTER**

16 The Corner Brook Frequency Converter is an old unit that is critical to CBPP operations. CBPP was
17 aware that Hydro was working on addressing some issues with the unit (some of which required
18 CBPP to be without power for long periods). We understand the work to date was to address
19 significant deficiencies identified in a 2005 internal Hydro report, which builds on the conclusions
20 of a 1998 Acres report.

21 However, a more recent report on the unit prepared for Hydro by Siemens (2015) indicates that
22 the current condition is still not conducive to operating the unit at full load, and major capital
23 investment is needed before that can occur. The report concludes:

- 24 - "Both the 50 and 60 cycle units were extremely dirty with heavy contamination" and "The
25 DC exciters were extremely dirty with a large amount of carbon contamination"
- 26 - Electrical tests on both stator windings and both rotors gave satisfactory results.
- 27 - Despite this, Siemens does not recommend that the unit be operated up to "its maximum
28 output of 25 MW" until the 2 stators have been cleaned and rewound with a suitable class
29 of insulation.

30 This lower operating limit is not conducive to maximizing the value of CBPP generation to the
31 benefit of both CBPP and all customers.

32 **5.0 CAPITAL IMPROVEMENTS**

33 I understand part of Hydro's rationale for increasing the costs to CBPP is that Hydro has spent
34 considerable amounts since 2006 on capital improvements. This is difficult for CBPP to fully
35 understand, as the unit remains in a state of underperformance. CBPP is aware that Hydro has
36 done such work as rewinding parts of the unit (the rotors) but this is a normal part of keeping

1 rotating units in service and would be expected to be part of the services included in the annual
2 costs that CBPP has been paying.

3 Outside of that job, it seems to CBPP that we are automatically allocated the full costs of any
4 capital work Hydro does on the plant, as if they were a contractor and we were the sole customer.
5 However, we do not receive the normal protections that we would get in any contract relationship
6 that CBPP uses when we work on our equipment, such as supervising the work, quality control,
7 scheduling, or various legal rights for inadequate contractor performance. CBPP is not routinely
8 involved in planning the long-term work schedule for the unit or offered options regarding how
9 work would be carried out or if CBPP would rather take on specific work themselves (or lead the
10 contracting), for example.

11 A good example of CBPP's concerns is that the currently proposed increase to the Specifically
12 Assigned Charge was largely a surprise to CBPP, despite the capital work that drives this cost
13 increase occurring years ago. We were not sufficiently apprised as these projects were undertaken
14 as to what the cost impact to us would be.

15 CBPP is also increasingly concerned that at the next GRA we will be hit with an even larger
16 increase as the unit moves closer to the end of its life. There has been insufficient discussion of
17 what happens over the next number of years in terms of investment or life extension. If nothing
18 is done today to change the relationship, it is CBPP's concern that Hydro will move along making
19 large investments without sufficient CBPP involvement, consideration of appropriate options, or
20 understanding of the cost implications, and we will be back in this same position in a more
21 extreme manner at the next GRA.

22 We have been trying to engage Hydro on the options over the medium to long-term, and are
23 slowly starting to make some progress, but much more work is needed. There is a critical need
24 for a long-term plan showing the capital investment needed year by year to keep this unit in
25 service and operating to its full potential, with these plans being fully costed including rate
26 impacts. Some initial steps have been taken, but these mostly focus on immediate needs and
27 condition and not a full long-term plan.

28 **6.0 OPERATING AND MAINTENANCE**

29 Another aspect of the charge that CBPP is forced to pay is for operating and maintenance
30 expenses for the unit. CBPP recognizes there are costs to operate and maintain equipment.
31 However, the last time the rates were set, O&M costs were about \$140,000 of the charge. The
32 new proposal is that these O&M costs are to be set at \$352,000. It is not reasonable that the
33 costs to operate this unit has increased 152%. The unit is rarely staffed, there is very little routine
34 maintenance required and Hydro has not increased its attention to the unit in terms of staff time
35 or resources since 2006. Our team asked Hydro if they could explain why these costs have
36 increased and the response, as I understand it, is that the unit is now a greater net investment
37 value and so the O&M cost allocation is higher. This is not reasonable, and is not something CBPP
38 would stand for if we were having the same negotiations with an independent contractor. The
39 O&M cost might have gone up to account for some inflation, but it may also have gone down
40 some amount as Hydro has installed (and proposed to charge CBPP) with such items as increased

1 remote monitoring equipment in the unit, which reduces the need for staff checks on the plant.
2 We have seen no evidence that justifies the hours and supplies used to maintain this unit that
3 adds up to \$352,000.

4 **7.0 OPTIONS**

5 For CBPP there are a number of possible options we see to how this unit could be dealt with over
6 the long-term.

7 First, we must note that we stand behind our position that CBPP was promised (including in
8 contracts) that the frequency converter would be provided permanently and at Hydro's own
9 expense. The converter was an integral part of developing the power grid in the 1960s that
10 everyone today enjoys, and it is unfair to CBPP that Hydro has gone back on this commitment.

11 CBPP recognizes that there is opposition to this solution, as it would shift a small cost (in relation
12 to the size of the island system) back onto other customers. CBPP does not view this as unfair,
13 as these other customers are still benefitting from the original decision to go with a 60 Hz grid
14 which necessitated the converter.

15 If it remains that CBPP must pay the entire cost as a Specifically Assigned Charge, then a serious
16 assessment is required by CBPP and Hydro about options for the long-term plan for this asset,
17 whether it can be extended in an affordable way, how it dovetails with other possible Conservation
18 and Demand Management actions at Deer Lake (including unit conversions), as well as exploring
19 a much different relationship with Hydro in terms of communication and coordination, and
20 appropriate contractual protections for work being done on the converter¹.

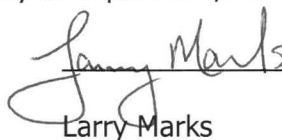
21 Also, there should be no operating costs assigned to CBPP that cannot be justified in detail by
22 cost analysis including review of staff timesheets, department budgets, and the like.

23 In the meantime, it is reasonable that this charge be maintained at the current level (\$347,000
24 per year).

25

26 All of which is respectfully submitted this 3RD day of September, 2015.

27


Larry Marks

28

¹ For example, CBPP should have a much stronger role in reviewing and approving all capital work, being provided detailed information on the effect of the work on CBPP's rate, more of an active role in planning and choosing options for which work is carried out and when, in timing and management of ongoing work, quality control and supervision, and with rights to pursue damages for poor work by Hydro or its contractors, and protections from unjustified capital cost escalation.