1 Q. Consumer Question: Exhibit CE-28 is a study called "Churchill River Complex: Power

2 and Energy Modeling Study" conducted by Acres International and dated 1998. In

3 that study, there was no AC/DC converter (and therefore no converter losses) and

4 no transmission congestion, and the average energy reported for Muskrat was 4.4

5 TWh/yr at the generator (Table S-1) and 4.26 TWhyr at Quebec border (Table

6 S-2). Firm energy at the generator was reported by Acres at 4.08 TWh (Table S-1}.

7 Now Nalcor is claiming average energy of 4.9 TWh/yr and firm energy of 4.4

8 TWh/yr.

9

10 (a) What is the basis for Nalcor's 4.9 TWh/yr average energy estimate? In

11 replying, please explain all differences between the current estimate

12 and the estimate in CE-28. In addition, include a detailed discussion

13 of any spillage of water at both Muskrat Falls and all other

14 interconnected hydro-electric facilities in order to accommodate

15 production from Muskrat Fall? If full integrated spillage analysis is not

16 available, please indicate when it will be available and provide the

17 terms of reference for that work.

18 (b) Please quantify the forecasted annual spill of water that is expected at

19 Muskrat Falls by year over the period 2017-2067. Provide the spillage

20 estimate at Muskrat Falls by month assuming a normal water year in

21 2018, 2028, 2038, and 2048.

22 (c) Please quantify the forecasted annual spill of water that is expected at

23 on-island generation by year over the period 2010-2067 under both

24 the isolated island and integrated system scenarios.

1   A.   (a)   Please note that Table S-1 of Exhibit CE-28 (Public) does not state that the

2   average production of Muskrat Falls is 4.4 TWh. Table S-1 of Exhibit CE-28

3   (Public) shows the following:

4

5

Model Setups	Incremental Average Energy (TWh/yr)
CF1 + Gull	46.28
CF1 + Gull + Muskrat	50.69
Difference	4.41

13   The difference between the two model setups is not the expected average

14   production of Muskrat Falls, but rather the expected average production at

15   Muskrat Falls less the expected production loss at Gull Island resulting from

16   the presence of the Muskrat Falls reservoir. The presence of the Muskrat

17   Falls reservoir reduces output at Gull Island slightly, with the result that

18   incremental average production on the river system is 4.41 TWh after

19   impoundment of the Muskrat Falls reservoir. The same rationale explains

20   the difference between incremental annual firm production on the system

21   and Muskrat Falls annual firm production.

22

23   Table 5-4 of Exhibit CE-28 (Public) reports Muskrat Falls average annual

24   production at 4.91 TWh; this average annual production is in accordance

25   with the 4.9 TWh currently used by Nalcor.

1   Integrated spillage analysis for Muskrat Falls is included in Confidential

2   Exhibit CE-26, and this Confidential Exhibit has been made available to the

3   Board and its Consultant. Public release of this document is not possible.

4   Please note that Nalcor's hydrological modeling has been reviewed by MHI,

5   who concluded that Nalcor's Muskrat Falls studies were "comprehensive

6   and detailed, with no apparent weaknesses identified."[1]

7

8   (b)   Public release of this information is not possible, as this information is

9   confidential and commercially sensitive.

10

11   (c)   Public release of this information is not possible, as this information is

12   confidential and commercially sensitive.

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[1] Manitoba Hydro International Report, Volume 2, page 54