

VOLUME 6

Index – MIPUG Book of Documents

Manitoba Hydro's Needs For and Alternatives To (NFAT) Review

March 25-27, 2014

Tab #	Description	Sources
1	a) Wuskwatim NFAAT CEC Hearing Transcript Excerpt – cross-examination between Doug Abra (Counsel to Commission) and Ed Wojczynski (Manitoba Hydro)	a) Manitoba Clean Environment Commission, Verbatim Transcript Volume 2, March 2, 2004; pages 493-495. Available online: http://www.cecmanitoba.ca/resource/hearings/37/March2041.txt
2	a) NFAT Hearing Transcript of Mr. Ed Wojczynski	a) NFAT Hearing Transcript from March 10, 2014, pages 1490-1491. Direct Testimony of Mr. Ed Wojczynski – Needs For and Alternatives To Panel.
3	a) Water Rental Rate per Installed Horsepower 1993/94 to 2012/13 b) Water Rental payments 1993/94 – 2012/13	a) CAC/MH I-122 from the NFAT Hearing b) CAC/MH I-114 from NFAT Hearing
4	a) NFAT Chapter 13: Integrated Comparisons of Development Plans – Multiple Account Analysis excerpts	a) Manitoba Hydro NFAT Business Case, Chapter 13: Integrated Comparisons of Development Plans – Multiple Account Analysis, February 2014, pages 28 – 32 and 69.
5	a) Manitoba Hydro Act – Part III – Revenue and General Borrowing	a) The Manitoba Hydro Act, C.C.S.M c. H190, Current as of 2014-03-21. Part III General Revenue and Borrowing Sections 29 – 35. Pages 38 – 43. Available online: https://web2.gov.mb.ca/laws/statutes/ccsm/pdf.php?cap=h190
6	a) Public Utilities Board Order 51/96 pages on provincial government guarantee fee water rentals and	a) Public Utilities Board Order No. 51/96 in the Application by Manitoba Hydro for an Order Approving Rates to be Effective April 1, 1996 and April 1, 1997. Dated April 15, 1996; pages 25 – 29.
7	a) Water Rental Table for Plan 14 and Plan 1 REF-REF-REF scenarios – Based on Chapter 9: Economic Analysis with Inflation for first 35 years	a) Based on Appendix 9.3, page 91 (for Plan 14) and page 99 (for Plan 1) with inflation added based on Appendix 11.2, page 1, projected escalation of MB CPI for 2020 & on for first 35 years of analysis.

TAB 1

1 MS. WRAY: Yes.

2 MR. ABRA: And it is that rate that
3 has been used in all of your current estimates of
4 cost?

5 MS. WRAY: Yes, it has.

6 MR. ABRA: Now that rate has also gone
7 up over the last number of years, has it not -- or
8 has it?

9 MS. WRAY: Again, that hasn't changed
10 for quite a few years.

11 MR. CORMIE: That rate was changed
12 several years ago.

13 MR. ABRA: What is several, Mr.
14 Cormie?

15 MR. CORMIE: I think it is two years
16 ago.

17 MR. ABRA: And do you know what the
18 history is over the past ten years?

19 MR. CORMIE: I know it has changed, I
20 don't have the exact numbers.

21 MR. ABRA: You can get that for us?

22 MR. CORMIE: We can get those for you,
23 yes.

24

25 (UNDERTAKING # MH-9: Provide history of water

1 rental rate)

2

3 MR. ABRA: Have these increases been
4 taken into consideration at all in your cost
5 estimates, the past increases?

6 MR. WOJCZYNSKI: In our economic
7 evaluations, we assume they go up with the rate of
8 inflation. In the financial evaluations the
9 standard procedure is we keep them constant in
10 nominal terms.

11 MR. ABRA: You have always done that
12 for the purpose of forecasting finance, as opposed
13 to economics?

14 MR. WOJCZYNSKI: We have always done
15 these two different approaches, yes.

16 MR. ABRA: Okay. What does the term
17 "full absorption costing" mean?

18 MS. WRAY: It means that if you take
19 what we call an activity rate, which is a rate
20 that is applied to, for a hour of labour, that
21 rate would reflect not just the cost of the
22 person's wage, but also the indirect costs that
23 would be associated with the -- direct and
24 indirect costs that would be associated with that
25 hour of labour. In addition to that, there would

1 be an "adder" for overhead. So full absorption
2 costing is designed to pick up the total share of
3 costs applicable to that one hour of labour.

4 It could, by the way, be something
5 other than an hour of labour that would be the
6 driving force, it might be done on a space, square
7 footage kind of basis, if it is that kind of
8 calculation.

9 MR. ABRA: And you are going to use
10 full absorption costing for the purposes of the
11 Wuskwatim project, as you do for --

12 MS. WRAY: Yes, our costs would be
13 recovered on a full absorption basis.

14 MR. ABRA: David, could you put up
15 CAC/MSOS/NCN I - NFAAT 1c, please? Over to the
16 next page -- sorry, the second page of that.
17 There you go.

18 Now, the capital costs shown there, do
19 they reflect the sunk costs after April 1st of
20 2002?

21 MS. WRAY: I'm just trying to find the
22 context of the question, but are these the costs
23 for the partnership?

24 MR. ABRA: It was in response to a
25 question from CAC -- I will ask Mr. Williams'

TAB 2

1 of Manitoba Hydro, were presented not with these exact
2 numbers. We had some proxy information which we used
3 the high capital costs from the NFAT submission, which
4 actually are just a -- are essentially similar to these
5 numbers. Or, actually, in some ways it may be a little
6 bit worse, but essentially similar to these numbers
7 that Ms. Flynn just presented. So the executive of
8 Manitoba Hydro, the Board of Manitoba Hydro,
9 essentially saw the same information and, in
10 consideration of -- of these numbers, and in
11 consideration of the range of benefits that all still
12 stand, all the other ones we've talked about in the
13 submission, they reaffirmed that from Manitoba Hydro's
14 point of view, this was a plan that was -- that was
15 justified and met the needs of Manitobans in the best
16 way to meet the needs -- the needs of Manitobans.

17 So I'll move on, and go to the first
18 perspective in addition to the ones that Ms. Flynn
19 referred to. This is a graph of -- showing the same
20 plans and scenarios that Ms. Flynn presented in her
21 second last overhead. And this is a NPV to Manitoba
22 Hydro for each one of those plans. And I won't repeat
23 them, because they are the numbers that she just
24 communicated.

25 But what I'm doing in this one, the

1 purpose of this is that the transfers to the province
2 are a major component. We talked about that in the
3 original submission. And whereas the -- the -- first
4 of all we look at the economics to Manitoba Hydro and
5 we'll look at the impacts on rates and the financial
6 targets to Manitoba Hydro next week -- what's also of
7 importance in the NFAT process is we have to look from
8 a provincial perspective as well. And these are the
9 transfers to the province.

10 If we look at the Keeyask/Gas plans
11 under these scenarios -- and they'd be similar in other
12 scenarios -- what with the -- the transfers of water
13 rental, capital tax, debt guarantee fee, we're talking
14 about in the Keeyask/Gas plans something in the order
15 of three-quarters (3/4s) of a billion NPV of transfers
16 to the provincial government.

17 If you're looking at the
18 Keeyask/Conawapa Plan, with the 750 megawatt
19 interconnection, you're talking about in the order of
20 one and a half (1 1/2) billion. Now, that is a cost to
21 Manitoba Hydro and it's a cost to the ratepayers, but
22 to Manitobans, indirectly through the Government of
23 Manitoba, it is a benefit and it has to be part of the
24 consideration of this process. And it is definitely
25 then a benefit to -- to the province as a whole.

TAB 3

REFERENCE: Chapter 10: Economic Uncertainty Analysis - Probabilistic Analysis and Sensitivities; Section: 10.1.1.1; Page No.: 3

PREAMBLE: The reference case assumes that water rental rates stay constant over the study period.

QUESTION:

Please provide a history of water rental rates over the past 20 years (i.e., when have they changed and by how much?)

RESPONSE:

The water rental rates are provided in the table below. Water rentals are assessed for each hydro-electric generating station on a calendar year basis and are calculated based on the greater of:

30) a fixed rate (in \$ per installed horsepower) multiplied by the installed capacity;

31) a fixed rate (in \$ per horsepower year) multiplied by the electric output for the year.

In almost all circumstances, the second calculation is higher and therefore determines the water rental assessment. The current rate of \$20.32/hp-year is equivalent to 3.3426 mills per KWh.

Fiscal Year	Per Installed Horsepower		Per Horsepower Year Generated	
	Rate	Change in Rate	Rate	Change in Rate
1993-1994	3.96		9.90	
1994-1995	3.96	-	9.90	-
1995-1996	3.96	-	9.90	-
1996-1997	3.96	-	9.90	-
1997-1998	3.96	-	9.90	-
1998-1999	3.96	-	9.90	-
1999-2000	3.96	-	9.90	-
2000-2001	3.96	-	9.90	-
2001-2002*	8.13	4.17	20.32	10.42
2002-2003	8.13	-	20.32	-
2003-2004	8.13	-	20.32	-
2004-2005	8.13	-	20.32	-
2005-2006	8.13	-	20.32	-
2006-2007	8.13	-	20.32	-
2007-2008	8.13	-	20.32	-
2008-2009	8.13	-	20.32	-
2009-2010	8.13	-	20.32	-
2010-2011	8.13	-	20.32	-
2011-2012	8.13	-	20.32	-
2012-2013	8.13	-	20.32	-

2 Note * Effective April 1, 2001.

1 **REFERENCE: Appendix 9.3 Economic Evaluation Documentation; Section: 3.2.2; Page**
2 **No.: 88**

3
4 **QUESTION:**

5 Please provide a 20-year history of water rental fees charged by the province.
6

7 **RESPONSE:**

8 The table below provides water rentals paid by Manitoba Hydro. These amounts exclude water
9 rentals assessed to Winnipeg Hydro prior its purchase by Manitoba Hydro in 2002. Also note
10 that the 2012/13 assessment includes water rentals assessed to the Wuskwatim Power Limited
11 Partnership.

1
2

WATER RENTALS ASSESSED TO MANITOBA HYDRO (INCLUDING WUSKWATIM
POWER LIMITED PARTNERSHIP).

Fiscal Year	Water Rental Fees
1993-1994	\$ 42,652,090.88
1994-1995	\$ 43,862,046.56
1995-1996	\$ 45,817,600.01
1996-1997	\$ 50,016,042.11
1997-1998	\$ 53,427,855.14
1998-1999	\$ 46,253,229.35
1999-2000	\$ 46,186,661.65
2000-2001	\$ 50,801,545.54
2001-2002	\$ 106,823,339.24
2002-2003	\$ 95,149,600.84
2003-2004	\$ 64,511,478.28
2004-2005	\$ 104,072,964.32
2005-2006	\$ 124,409,993.32
2006-2007	\$ 105,664,304.80
2007-2008	\$ 116,652,081.48
2008-2009	\$ 114,549,063.36
2009-2010	\$ 114,016,964.68
2010-2011	\$ 114,122,275.08
2011-2012	\$ 110,840,270.68
2012-2013	\$ 110,427,160.34

TAB 4

1 over the smaller one and the advantage of both of those compared to the two alternatives
2 without a new interconnection.

3
4 In addition to this reliability benefit, the Preferred Development Plan offers customers more
5 security against the risks of extreme drought. The import capability with the large new
6 interconnection plus the advancement of hydro generating capacity for export would provide
7 Manitoba Hydro greater access to back-up supply and flexibility to manage extreme droughts
8 than with the other alternatives, particularly those without any new interconnection.

10 **Summary of Customer Account**

11 In sum, the Preferred Development Plan would result in greater rate increases than the other
12 plans in the short to medium term, with the projected cumulative rate increase approximately
13 16 to 18 percentage points more than the alternatives by 2031/32. However, the Preferred
14 Development Plan would result in the lowest rates over the longer term. By 2061/62 the
15 projected cumulative rate change in the Preferred Development Plan would be approximately
16 34 to 70 percentage points less than the other plans.

17
18 The Preferred Development Plan would benefit customers with its greater system reliability and
19 significantly lower expected cost of unserved load, as well as its greater ability to manage
20 extreme drought.

22 **13.3.3 Manitoba Government Account**

23 Included in the annual expenditures and financing costs that Manitoba Hydro incurs, and that
24 are reflected in its rates, are taxes and other fees and charges paid to the provincial

government. These include the capital taxes and water rental fees that constitute a significant component of the annual expenditures captured in the market valuation account; the debt guarantee and sinking fund administration fees that add roughly 1% to Manitoba Hydro's cost of capital, and thereby directly affect rates; and the coal taxes and assumed carbon charges²⁰ that add to the cost of thermal power operations.

In Table 13.3 below the amount of these payments that would be made in the preferred and alternative development plans are shown. As shown in the table, the total payments are substantial, ranging from \$4.3 to \$5.6 billion in present value over the planning period. The largest amount of payments arises with the Preferred Development Plan – some \$660 to \$770 million greater than the two plans with Keeyask G.S., and \$1.27 billion greater than the all gas plan.

Table 13.3 DIRECT MH PAYMENTS TO MANITOBA GOVERNMENT

	Preferred Development Plan	K19/G24/250MW	K22/Gas	All Gas
Capital Tax	1,457.1	1,202.7	1,188.0	991.9
Water Rentals	1,512.4	1,413.3	1,385.6	1,303.4
Debt Guarantee Fee	2,597.5	2,218.3	2,162.1	1,894.9
Sinking Fund Admin Fee	7.1	6.3	5.9	4.4
Coal Tax	10.3	10.3	10.3	10.3
Potential Carbon Charges	28.3	103.4	92.8	139.6
Total Payments	5,612.7	4,954.3	4,844.7	4,344.5
Difference from Preferred Development Plan	0	[658.4]	[768.0]	[1,268.2]

NFAT REFERENCE SCENARIO ASSUMPTIONS (2014 PRESENT VALUE IN MILLIONS OF 2014\$)

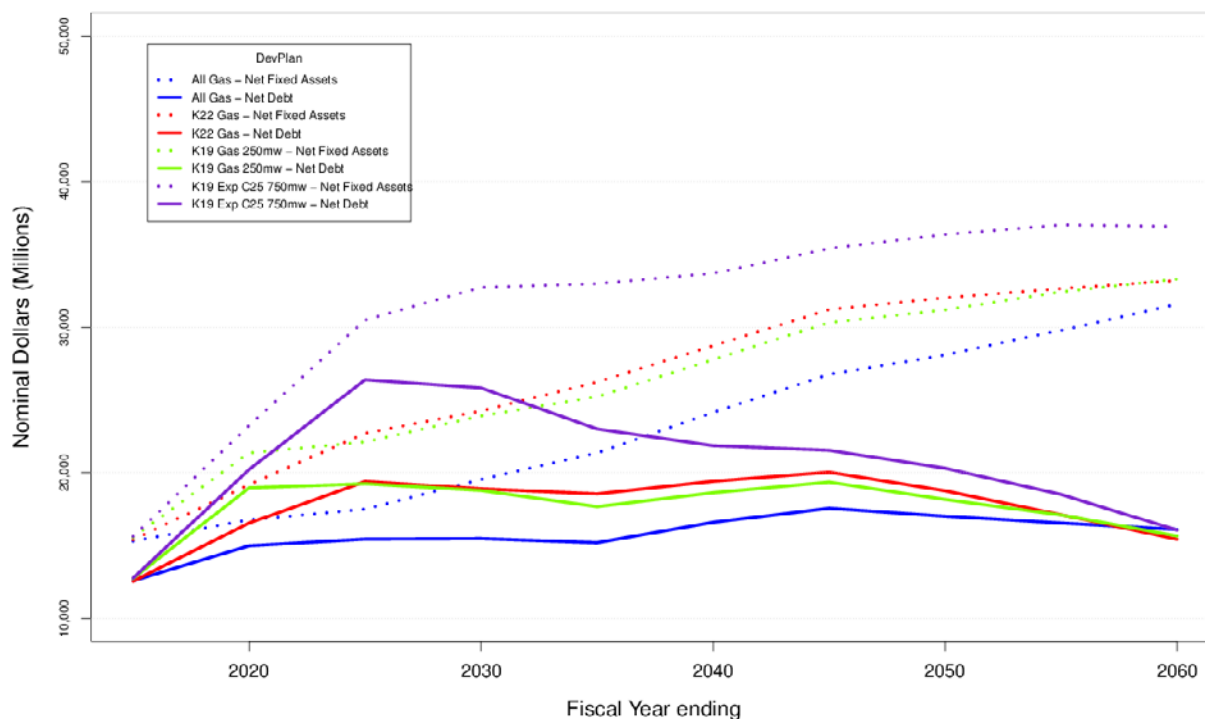
²⁰ The carbon charges are included to indicate their potential contribution to the total payments to government, but they may or may not be manifested as a tax, depending on the policy government were to adopt to implement such charges.

1 In terms of the economic significance of these payments to government, and therefore
2 Manitoba taxpayers, the question is what net benefit do they provide. To what extent do they
3 constitute incremental revenues for government not offset by incremental costs or risks?

4
5 The coal taxes and carbon charges do not offer net benefits. As explained in section 2, the
6 carbon charges may not result in direct payments to government, for example in a cap and
7 trade system, and in any event would be intended to internalize at least part of the social cost
8 of GHG emissions. The sinking fund administration fee also would not constitute a significant
9 net benefit for government, on the assumption that the fee serves to compensate government
10 for the administration costs it incurs.

11
12 The debt guarantee fees are substantial, but so too is the amount of debt that government
13 would be guaranteeing. Figure 13.3 shows the projected balances of net fixed assets and net
14 debt with the preferred and the alternative plans. As shown in the figure, there would be an
15 increase in the total amount of Manitoba Hydro's debt with all of the plans, but particularly in
16 the Preferred Development Plan with its development of both Keeyask G.S. and Conawapa G.S.

Figure 13.3 **MANITOBA HYDRO'S PROJECTED BALANCES OF NET DEBT AND NET FIXED ASSETS – NFAT**
REFERENCE SCENARIO ASSUMPTIONS
(MILLIONS OF NOMINAL\$)



The level of net debt must be considered in the context of the entire balance sheet, including the associated net assets that are under construction or in service. In the medium term, while net debt levels are the highest with the Preferred Development Plan, that plan also has the overall highest capital investment, fixed assets and retained earnings.

The Province of Manitoba provides a flow through credit to Manitoba Hydro and guarantees the vast majority of its debt. Given that the provincial debt guarantee fee is provided in exchange for this guarantee, the multiple account analysis has not included the debt guarantee

fees as part of the net benefits to the Manitoba government. It is assumed that the fee does not provide a net benefit. Under this assumption, the net benefits for government (and taxpayers) would arise only from the capital taxes and water rentals that Manitoba Hydro pays.

Accordingly, the estimated net benefit to government is shown in Table 13.4 for the preferred and alternative plans.²¹

Table 13.4 NET BENEFITS TO MANITOBA GOVERNMENT

	Preferred Development Plan	K19/G24/250MW	K22/Gas	All Gas
Capital tax	1,457.1	1,202.7	1,188.0	991.9
Water rentals	1,512.4	1,413.3	1,385.6	1,303.4
Total net benefit	2,969.5	2,616.0	2,573.6	2,295.3
Difference from Preferred Development Plan	0	[353.5]	[395.9]	[674.2]

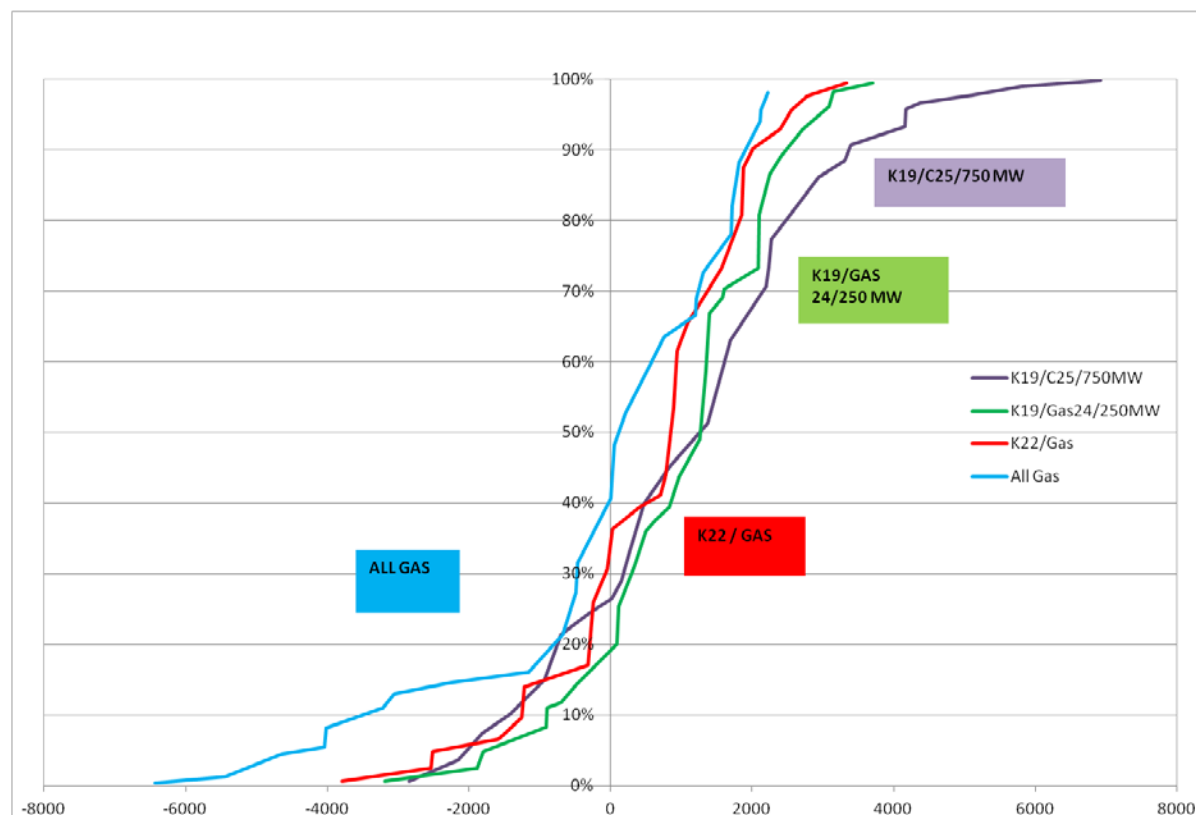
NFAT REFERENCE SCENARIO ASSUMPTIONS (2014 PRESENT VALUE IN MILLIONS 2014\$)

As shown in the table, while smaller than the total payments Manitoba Hydro would make to government, the total net benefit from capital taxes and water rentals is substantial, ranging from \$2.3 to almost \$3.0 billion in present value over the planning period. The net benefits are greatest for Manitoba Hydro's Preferred Development Plan – some \$350 to \$400 million

²¹ No expenditures are shown in the calculation of net benefits as there are no significant incremental expenditures that government would incur as a result of the different plans. The provincial government has contributed to training programs for Keeyask and as well road improvements in the area. However, these expenditures have already been incurred and no significant further expenditures are expected.

1

Figure 13.11 MANITOBA HYDRO NET REVENUE S-CURVES



2

3 2014 PRESENT VALUE IN MILLIONS OF 2014\$

4

5 The curves show that there is a wide range of outcomes for all of the plans. However there are
6 differences. Manitoba Hydro's Preferred Development Plan would appear to offer the greatest
7 upside potential. The all gas plan, on the other hand, exhibits the greatest downside risk. With
8 respect to the Preferred Development Plan versus the alternative with the smaller
9 interconnection there is a trade-off. There is a 50% chance the small-interconnection
10 alternative would be better than the Preferred Development Plan and it generally has less
11 downside risk. The Preferred Development Plan however has an equal chance of being better
12 with greater upside potential.

TAB 5



MANITOBA

THE MANITOBA HYDRO ACT

C.C.S.M. c. H190

LOI SUR L'HYDRO-MANITOBA

c. H190 de la *C.P.L.M.*

This is an unofficial consolidation showing the provisions of the Act in force as of the date shown below.

The official sources for this Act are the original Act and any amending Acts, as published by the Queen's Printer.

La présente loi est une codification non officielle indiquant les dispositions qui sont en vigueur à la date indiquée ci-dessous.

La loi originale et, le cas échéant, les lois modificatives publiées par l'Imprimeur de la Reine sont les sources officielles de la présente loi.

PART III

GENERAL REVENUE AND BORROWING

Collection of revenues

29 The income and revenue arising from the operation of the corporation, whether from the sale of power or otherwise, shall be collected by the corporation.

Authority for temporary borrowing

30(1) With the approval of the Lieutenant Governor in Council, the corporation may, from time to time, borrow or raise money for temporary purposes by way of overdraft, line of credit, or loan, or otherwise upon the credit of the corporation in such amounts, not exceeding in the aggregate the sum of \$500,000,000. of principal outstanding at any one time, upon such terms, for such periods, and upon such other conditions, as the corporation may determine.

Guarantee

30(2) The government may, on such terms as may be approved by the Lieutenant Governor in Council, guarantee the payment of the principal and interest on any borrowings of the corporation under this section.

Minister of Finance's approval

30(3) Where the corporation borrows or raises money under this section, otherwise than

- (a) by way of overdraft with a bank; or
- (b) by sale of its short term notes to a bank in lieu of borrowing by overdraft;

it shall do so only with the prior approval of the Minister of Finance, who, at the request of the corporation, may act as its agent in that behalf.

S.M. 1992, c. 8, s. 2.

PARTIE III

DISPOSITIONS GÉNÉRALES REVENUS ET EMPRUNTS

Perception des revenus

29 Il revient à la Régie de percevoir ses revenus, que ces derniers proviennent de la vente d'énergie ou d'autres sources.

Pouvoir relatif aux emprunts ponctuels

30(1) Sous réserve de l'approbation du lieutenant-gouverneur en conseil, la Régie peut emprunter ou recueillir des fonds pour la réalisation d'objectifs temporaires par voie de découvert, de marge de crédit, d'emprunt ou autrement sur le crédit de la Régie et pour des montants dont le principal non remboursé ne doit jamais dépasser 500 000 000 \$. Ce financement se fait selon les termes, les échéances et les conditions que la Régie peut établir.

Garantie

30(2) Le gouvernement peut, selon les termes approuvés par le lieutenant-gouverneur en conseil, garantir le paiement du principal et des intérêts des emprunts contractés aux termes du présent article.

Approbation du ministre des Finances

30(3) À moins d'une autorisation préalable du ministre des Finances, la Régie ne peut emprunter ni recueillir des sommes en vertu du présent article à moins qu'elle procède :

- a) soit par voie de découvert bancaire;
- b) soit par la vente de ses billets à court terme.

Le ministre des Finances peut, si la Régie le lui demande, agir à titre d'agent de la Régie pour emprunter ou recueillir ces sommes.

L.M. 1992, c. 8, art. 2.

Temporary advances by government

31 To the extent permitted by any Act of the Legislature the Lieutenant Governor in Council, on the recommendation of the Minister of Finance, may authorize the Minister of Finance to advance moneys to the corporation for its temporary purposes out of the Consolidated Fund; and every such advance shall be repaid by the corporation to the Minister of Finance at such times, and on such terms, as the Lieutenant Governor in Council may direct, together with interest thereon at such rate per annum as may be approved by the Lieutenant Governor in Council at the time of the making of the advance and from time to time.

Loans by government

32(1) To the extent permitted by any Act of the Legislature the Lieutenant Governor in Council may authorize the raising by way of loan, in the manner provided in *The Financial Administration Act* and *The Loans Act*, of such sums as the Lieutenant Governor in Council may deem requisite for any of the purposes of the corporation under this Act; and any such sums may be advanced to, and paid over by the Minister of Finance to, the corporation, and shall be repaid by it to the Minister of Finance at such times and on such terms as the Lieutenant Governor in Council may direct, together with interest thereon as provided in subsection (2).

Fixing of rate of interest

32(2) Where an advance is made to the corporation under subsection (1), the Lieutenant Governor in Council shall, by order in council at the time of making the advance, fix the rate of interest that shall be paid by the corporation on the sums so advanced, or on the balance thereof remaining from time to time outstanding and not repaid, during such period as is stated in the order; and after the expiry of that period the Minister of Finance shall, by an order in writing, fix, and alter from time to time, as may be required, the rate of interest that shall be paid by the corporation on the sums so advanced, or on the balance thereof as aforesaid, during any one or more subsequent periods that may be stated in any such order.

Avances temporaires du gouvernement

31 Dans la mesure où le permet une loi de la Législature, le lieutenant-gouverneur en conseil peut, sur recommandation du ministre des Finances, autoriser celui-ci à avancer des sommes sur le Trésor à la Régie pour la réalisation de ses objectifs temporaires. La Régie doit rembourser ces avances au ministre des Finances au moment et selon les termes indiqués par le lieutenant-gouverneur en conseil, en plus des intérêts annuels au taux approuvé par le lieutenant-gouverneur en conseil au moment de l'avance.

Prêts du gouvernement

32(1) Dans la mesure où le permet une loi de la Législature, le lieutenant-gouverneur en conseil peut autoriser l'acquisition, par voie d'emprunt et de la manière que prévoit la *Loi sur l'administration financière* et la « *Loans Act* », des sommes qu'il juge nécessaires à la réalisation de l'un des objectifs de la Régie aux termes de la présente loi. Le ministre des Finances verse à la Régie les sommes avancées. La Régie doit rembourser ces sommes au ministre des Finances au moment et selon les termes que le lieutenant-gouverneur en conseil peut indiquer, en plus des intérêts sur ces sommes à des taux établis aux termes du paragraphe (2).

Taux d'intérêt

32(2) Le lieutenant-gouverneur en conseil fixe, par décret pris au moment de l'avance, le taux des intérêts que la Régie doit payer sur les avances faites en vertu du paragraphe (1) ou sur le solde impayé et la période pendant laquelle ces taux sont en vigueur. Après cette période, le ministre des Finances fixe par ordonnance écrite le taux d'intérêt que la Régie doit payer sur les sommes ainsi avancées ou sur le solde impayé pour les périodes ultérieures indiquées dans l'ordonnance, et il peut modifier, au besoin, ce taux.

Power of corporation to borrow and to issue securities

33(1) Subject to the approval of the Lieutenant Governor in Council, and to subsection (2), the corporation may

- (a) raise money by way of loan on the credit of the corporation;
- (b) limit or increase the amount to be raised;
- (c) issue notes, bonds, debentures, or other securities of the corporation;

for the purposes of the corporation or for any related business venture; and, through the Minister of Finance, who shall be its agent in that behalf, it may

- (d) sell or otherwise dispose of the notes, bonds, debentures, or securities, for such sums, and at such prices, as are deemed expedient;
- (e) raise money by way of loan on any such securities;
- (f) pledge or hypothecate any such securities as collateral security; and
- (g) do any of those things.

Limitation on borrowing powers

33(2) The powers conferred on the corporation under subsection (1) may be exercised only

- (a) for the repayment of any expenditure made, or that may be made, by the government for the purposes provided for in this Act or for any related business venture, or for the repayment, refunding, or renewal, of the whole or part of any loan or advance made by the government to the corporation or of notes, bonds, debentures, or other securities issued by the corporation; or
- (b) in cases to which clause (a) does not apply, only to the extent permitted by this Act or any other Act of the Legislature.

Pouvoirs d'emprunt

33(1) Sous réserve de l'approbation du lieutenant-gouverneur en conseil et sous réserve du paragraphe (2), la Régie peut, pour atteindre ses objectifs ou pour la poursuite d'une entreprise commerciale connexe :

- a) recueillir des sommes par voie d'emprunt sur son propre crédit;
- b) limiter ou augmenter les sommes à recueillir;
- c) émettre des billets, obligations, débentures ou autres titres de la Régie.

La Régie, par l'intermédiaire du ministre des Finances, mandataire de la Régie à cette fin, peut :

- d) vendre ou se départir autrement des billets, obligations, débentures ou autres titres pour les montants et au prix qui semblent convenables;
- e) recueillir des fonds par voie d'emprunts garantis par ces titres;
- f) mettre en gage ou hypothéquer ces titres comme sûreté accessoire;
- g) poser l'un ou plusieurs de ces actes.

Limitation des pouvoirs d'emprunt

33(2) Les pouvoirs que le paragraphe (1) confère à la Régie sont restreints aux cas suivants :

- a) le remboursement des dépenses faites ou pouvant être faites par le gouvernement aux fins prévues à la présente loi ou pour la poursuite d'une entreprise commerciale connexe ou le remboursement, la consolidation ou le renouvellement de tout ou partie des emprunts ou avances que le gouvernement a faits à la Régie ou des billets, obligations, débentures ou autres titres émis par la Régie;
- b) aux cas non prévus par l'alinéa a), uniquement dans la mesure permise par la présente loi ou par une autre loi de la Législature.

Reissue of pledged securities

33(3) Where securities have been pledged or hypothecated by the corporation as security for a loan and the loan has been paid off, the securities are not thereby extinguished, but are still alive, and may be reissued and sold or pledged as if the former pledging had not taken place.

Form of securities

33(4) The notes, bonds, debentures, and other securities the issue of which is authorized by subsection (1) shall be in such form, and shall bear such rates of interest, and shall be payable as to principal, interest, and premium, if any, at such times and places, in the currencies of such countries, in such amounts, and in such manner in all respects, as the Lieutenant Governor in Council may determine.

Form of securities

33(5) The notes, bonds, debentures, and other securities authorized by subsection (1) shall bear the seal of the corporation which may be impressed thereon or may be engraved, lithographed, printed, or otherwise mechanically reproduced thereon, and, together with any coupons attached thereto, shall bear the manual, engraved, lithographed, printed, or otherwise mechanically reproduced signatures of the chairman and of any one officer of the corporation appointed by the board for that purpose; and any such mechanically reproduced seal and signatures are, for all purposes, valid and binding upon the corporation if the note, bond, debenture, or other security bearing it, or to which the coupon bearing it is attached, is countersigned by an officer appointed by the corporation for that purpose, notwithstanding that the person whose signature is so reproduced may not have held office at the date of the notes, bonds, debentures, or other securities or at the date of the delivery thereof and notwithstanding that the person who holds any such office at the time when any such signature is affixed is not the person who holds that office at the date of the notes, bonds, debentures, or other securities or at the date of the delivery thereof.

Réémission des titres mis en gage

33(3) Lorsque l'emprunt garanti par des titres mis en gage ou grevés d'une hypothèque par la Régie est remboursé, les titres constituant la garantie ne se périment pas. Ils demeurent en vigueur et peuvent être réémis et vendus ou mis en gage comme s'ils n'avaient jamais été mis en gage.

Caractéristiques des titres

33(4) Le lieutenant-gouverneur en conseil peut déterminer les caractéristiques des billets, obligations et autres titres émis sous le régime du paragraphe (1), notamment la forme de ces titres, les montants en capital concernés, l'intérêt qu'ils portent, l'échéance à laquelle ils seront remboursés ainsi que la devise ou les autres unités de valeur monétaire dans lesquelles ils seront libellés.

Constitution des titres

33(5) Les billets, obligations, débentures et autres titres dont l'émission est autorisée par le paragraphe (1), ainsi que leurs coupons doivent porter le sceau de la Régie. Ce sceau peut être apposé par empreinte, par gravure, par lithographie, par voie d'imprimerie ou par tout autre moyen mécanique. En outre, les titres ainsi que leurs coupons doivent porter la signature du président et d'un cadre de la Régie que le conseil nomme à cette fin. Ces signatures peuvent être apposées par tous les moyens prévus ci-dessus pour le sceau. Les sceaux et signatures ainsi apposés sont à toutes fins valides et engagent la Régie si les titres ou coupons qui les portent sont contresignés par un cadre nommé à cette fin par la Régie. Le fait que la personne dont la signature est ainsi reproduite n'était pas en fonction à la date que portent les titres ou à la date de leur livraison, ainsi que le fait que la personne qui occupe cette fonction au moment où la signature a été apposée n'est pas la personne qui occupe cette fonction à la date que portent ces titres ou à leur date de livraison, n'affecte pas la validité de ces titres.

Proof that issue of securities is necessary

33(6) A recital or declaration, in the resolution or minutes of the board authorizing the issue or sale of notes, bonds, debentures, or other securities, to the effect that the amount of notes, bonds, debentures, or other securities so authorized is necessary to realize the net sum authorized or required to be raised by way of loan, is conclusive evidence of that fact.

S.M. 1997, c. 55, s. 13; S.M. 2011, c. 35, s. 21.

Power of government to guarantee

34(1) The government may, on such terms as may be approved by the Lieutenant Governor in Council, guarantee the payment of the principal, interest, and premium, if any, of any notes, bonds, debentures, and other securities issued by the corporation; and the form and manner of any such guarantee shall be such as the Lieutenant Governor in Council may approve.

Signing of guarantees

34(2) The guarantee shall be signed by the Minister of Finance, or such other officer or officers as may be designated by the Lieutenant Governor in Council; and, upon being signed, the government is liable for the payment of the principal, interest, and premium, if any, of the notes, bonds, debentures, and securities guaranteed, according to the tenor thereof.

Discharge of liability under guarantee

34(3) In a case to which subsections (1) and (2) apply, the Lieutenant Governor in Council may discharge the liability resulting from the guarantee out of the Consolidated Fund, or out of the proceeds of securities of the government issued and sold for the purpose; and, in the hands of a holder of any such notes, bonds, debentures, or securities of the corporation, a guarantee so signed is conclusive evidence that compliance has been made with this section.

Signature of Minister of Finance, etc.

34(4) The signature of the Minister of Finance or of any such officer or officers for which provision is made in subsection (2) may be engraved, lithographed, printed, or otherwise mechanically reproduced, and the mechanically reproduced signature of any such person shall be conclusively deemed, for all purposes, the signature of that person and is binding upon the

Preuve de la nécessité de l'émission de titres

33(6) Le fait d'indiquer dans une résolution ou dans le procès-verbal du conseil autorisant l'émission ou la vente de billets, d'obligations, de débentures ou d'autres titres que le montant des titres ainsi autorisé est nécessaire pour permettre l'acquisition des fonds que la Régie est autorisée ou obligée d'acquérir par voie d'emprunt est une preuve concluante de cette nécessité.

L.M. 1997, c. 55, art. 13.

Pouvoir de garantie du gouvernement

34(1) Le gouvernement peut, selon la manière, la forme et les termes que peut prescrire le lieutenant-gouverneur en conseil garantir le paiement du principal, des intérêts et des primes, s'il en est, des billets, obligations, débentures et autres titres émis par la Régie.

Signature des garanties

34(2) La garantie est signée par le ministre des Finances ou par un cadre du gouvernement que désigne le lieutenant-gouverneur en conseil. Une fois la garantie signée, le gouvernement est responsable du paiement du principal, des intérêts et des primes, s'il en est, des billets, obligations, débentures et autres titres garantis, selon la teneur de ces titres.

Exécution de l'obligation de garantie

34(3) Dans les cas auxquels s'appliquent les paragraphes (1) et (2), le lieutenant-gouverneur en conseil peut exécuter son obligation résultant de la garantie donnée en vertu du présent article sur le Trésor ou sur le produit des titres qu'il émet et vend à cette fin. Pour le porteur de ces billets, obligations, débentures et autres titres, la garantie ainsi signée constitue une preuve concluante que les termes du présent article ont été respectés.

Signature du ministre des Finances

34(4) La signature du ministre des Finances ou d'un cadre, prévue au paragraphe (2), peut être gravée, lithographiée, imprimée ou reproduite mécaniquement de toute autre manière. La signature ainsi reproduite est péremptoirement réputée être la signature de cette personne et engage le gouvernement du Manitoba. Le fait que la personne dont la signature est ainsi

Government of Manitoba notwithstanding that the person whose signature is so reproduced may not have held office at the date of the notes, bonds, debentures, or other securities or at the date of the delivery thereof and notwithstanding that the person who holds any such office at the time when any such signature is affixed is not the person who holds that office at the date of the notes, bonds, debentures, or other securities or at the date of the delivery thereof.

Authority to raise loans in other currencies or in units of monetary value

35 Where this Act, or any other Act, authorizes the corporation to borrow or raise by way of loan a specific or maximum number of dollars by the issue and sale of notes, bonds, debentures, or other securities, it authorizes the borrowing, or raising by way of loan in whole or in part, of the same number of dollars of the currency of the United States; and if the amount of the loan is raised, in whole or in part, by the issue and sale of notes, bonds, debentures, or other securities payable in the currency of any country other than Canada or the United States or in units of monetary value, the Act authorizes the raising of an equivalent amount in that other currency or in units of monetary value calculated in accordance with the nominal rate of exchange between the Canadian dollar or the unit of monetary value, as the case may be, and the currency concerned on the business day next preceding the day on which the corporation authorizes the issue of the notes, bonds, debentures, or other securities, as that nominal rate is determined by any bank in Canada.

reproduite n'était pas en fonction à la date que porte les billets, obligations, débentures ou autres titres ou à la date de leur livraison, ainsi que le fait que la personne qui occupe la fonction au moment de la signature n'est pas celle qui occupe cette fonction à la date que portent ces titres ou leur date de livraison, n'affecte pas la validité de la signature.

Compétence pour emprunter en monnaie étrangère

35 Lorsque la présente loi ou une autre loi autorise la Régie à emprunter une somme donnée en émettant et en vendant des billets, des obligations, des débentures ou d'autres titres, cette loi autorise l'emprunt, en tout ou en partie, d'une somme équivalente, en devises des États-Unis. Si l'emprunt de capitaux se fait en tout ou en partie par l'émission et la vente de billets, d'obligations, de débentures ou d'autres titres libellés en devises autres que le dollar canadien ou le dollar américain, la même loi autorise l'acquisition d'un montant équivalent dans cette autre devise. Ce montant est calculé en fonction du taux nominal de change entre le dollar canadien et la devise concernée, déterminé par une banque canadienne le jour ouvrable qui précède le jour où la Régie autorise l'émission des billets, des obligations, des débentures ou des autres titres.

BANKING AND ACCOUNTS

36 [Repealed]

S.M. 1997, c. 55, s. 14.

Accounting records

37(1) The board shall establish and maintain adequate accounting records for the corporation, which shall include consolidated financial statements for the corporation and all of its subsidiaries, if any.

OPÉRATIONS BANCAIRES ET COMPTABLES

36 [Abrogé]

L.M. 1997, c. 55, art. 14.

Tenue des livres

37(1) Le conseil doit tenir, pour la Régie, des livres de comptabilité convenables y compris des états financiers consolidés pour la Régie et l'ensemble de ses filiales, s'il y a lieu.

TAB 6

2nd Floor
280 Smith Street
Winnipeg, Manitoba
R3C 1K2

The Public Utilities Board

MANITOBA

THE PUBLIC UTILITIES BOARD ACT

THE MANITOBA HYDRO ACT

THE CROWN CORPORATIONS PUBLIC REVIEW AND ACCOUNTABILITY ACT

Order No. 51/96

April 15, 1996

BEFORE: G. D. Forrest, Chairman
M. J. Anseeuw, Vice-Chairman
H. Enns, Member
J. Hillard, Member

**AN APPLICATION BY MANITOBA HYDRO
FOR AN ORDER APPROVING RATES
TO BE EFFECTIVE APRIL 1, 1996 AND APRIL 1, 1997**

Contracting Services

Hydro filed evidence detailing that contracting out meter reading activities, various repairs and maintenance duties at the Winnipeg River Station and the Grand Rapids Station and cleaning services at specific locations saved the company \$482,385 for the fiscal year ended 1994/95 and \$573,912 for the fiscal year ending 1995/96. The majority of these cost savings were made in the contracting out of meter reading duties (1995: \$325,273/1996: \$416,800).

The process Hydro uses to identify opportunities to contract out work involves periodic reviews of business processes throughout Hydro. A cost/benefit analysis is performed and the company's collective bargaining agreements and issues of safety and system reliability are given due consideration.

Under cross examination from counsel for CAC/MSOS, Dr. McCallum testified that the Hydro Board is confident that Hydro has "been diligent, almost relentless, in keeping . . . costs as low as possible".

10.3.3 Payments to the Provincial Government by Hydro**Provincial Government Guarantee Fee**

The Province of Manitoba requires Hydro to pay a Provincial government guarantee fee in return for the risk the Province bears in guaranteeing Hydro's long-term debt. The fee is currently set at 0.50 percent of the outstanding debt guaranteed by the Province at the preceding year end. The level of the fee is set as a matter of government policy and there is no negotiation between the Province and Hydro associated with the fee. Hydro has no control with regard to the payment of the fee.

Mr. Hall of RBC testified that only when Hydro achieved a debt to equity ratio of 60:40 would the Provincial government guarantee not be required in order for Hydro to raise finance in the capital markets.

Water Rental Rates

Hydro entered into an agreement with the Province of Manitoba to freeze water rental rates from April 1, 1997 to June 30, 1999. In return Hydro agreed to assume the Province's responsibility of costs for certain mitigation payments and for the North Central Transmission Program. The cost of these projects is estimated at \$33.1 million.

Hydro indicated that in comparison with the water rental rates paid in other Provinces it paid average rates.

The Province recently changed the method of payment of water rental rates from an annual to monthly basis. Hydro has estimated that the increased interest costs will approximate \$2 million a year.

Corporation Capital Tax

The Corporations Capital Tax is levied against businesses employing capital in the Province. Hydro had been exempt from paying the Corporations Capital Tax until the 1994 Provincial Budget rescinded Hydro's exemption. The assessment for the 1994/1995 fiscal year was calculated at \$11.5 million based on a formula being applied to the taxable capital of Hydro. The calculation of the capital tax has been revised to reflect the end of the transition period in which Hydro paid the tax at a lower rate. The capital tax is now calculated under the full requirements of the legislation, effective for the 1995/1996 fiscal year, resulting in a required payment of approximately \$25 million per year.

Major payments to the Provincial Government by Hydro are summarized as follows:

Year	Provincial Government Guarantee Fee	Water Rental Rates	Corporation Capital Tax	Total
	\$ 000s	\$ 000s	\$ 000s	\$ 000s
1992/1993 (actual)	12,966	44,784	Nil	57,750
1993/1994 (actual)	24,607	43,207	Nil	67,814
1994/1995 (actual)	26,890	44,390	11,500	82,780
1995/1996 (forecast)	25,252	45,859	24,646	95,757
1996/1997 (forecast)	27,025	47,483	25,216	99,724
1997/1998 (forecast)	27,025	47,690	25,467	100,182

97/98 actual 28,800 54,600

10.4 Intervenor's Positions

CAC/MSOS argued that Hydro's approach to financial planning is based upon a worst case scenario, and not a scenario that is likely to occur. CAC/MSOS stated that since weather variability will likely have the greatest effect on Hydro yet cannot be controlled, the most important determinant of Hydro's future financial position will be Hydro's own efforts to contain its own operating costs and capital expenditures. CAC/MSOS argued that should drought occur and competition unfold such as to cause a decline in revenues, then Hydro or the Board would not permit further decline in revenue without resorting to cost cutting and/or rate increases.

With respect to the various Provincial Government charges, CAC/MSOS stated that Hydro's belief that rate increases will not spawn increased government charges is

simplistic and at odds with reality. The reality is, according to CAC/MSOS, that what the Board grants to Hydro, the Provincial Government will take away. The shareholder therefore, is not too concerned about Hydro's financial health and the current debt to equity ratio. CAC/MSOS argued that the Provincial Government has consistently impeded Hydro's ability to improve its debt ratio by matching increased revenue from rate increases with increased levies on Hydro.

MIPUG noted with concern that the operating costs of Hydro continued to escalate, even during a forecasted period of non-expansion. MIPUG further noted that if annual operating costs could be reduced by 0.5 percent, annual rate increases could be adjusted down by 0.19 percent. MIPUG urged the Board to direct Hydro to improve its financial strength through cost control, improved productivity, contributions of capital and other measures.

MIPUG noted that the financial forecasts assume no further increases in Provincial Government charges, and questioned the prudence of accepting these assumptions. MIPUG suggested that any increased equity paid by the ratepayers would simply lead to new Provincial Government charges. MIPUG further noted that one of the biggest problems is the persistent introduction of new and unexpected charges by the Provincial Government, and questioned the timing and element of surprise in their introduction. MIPUG further identified these new and unexpected charges as the most serious risk that has materialized to Hydro. MIPUG urged the Board to consider establishing reserves built up from customer rates that are customer-owned rather than shareholder owned and thus impervious to Provincial Government charges.

The League also noted that there could be no assurance that an increase in rates will improve the debt to equity ratio of Hydro. Rather, it may be used to balance the provincial budget, as has been the recent experience. The League viewed Hydro's payment of the province's obligations for the Northern Flood Agreement in exchange for freezing water rentals as excessive. The League also supported MIPUG's recommendation for separate customer owned reserves.

10.5 Board Findings

Hydro's projections are based upon a number of assumptions and variables, many of which are outside of Hydro's control. The Board is satisfied that the economic and other assumptions used by Hydro in preparing IFF95-1 are reasonable. As a consequence, the integrated financial forecast is a useful management tool that reflects a general indication of Hydro's long-term financial direction and as such, is a sound basis for making decisions regarding the proposed rate adjustments for 1996 and 1997.

The Board is of the strong view that any strengthening of Hydro's balance sheet over the next few years cannot and should not come from rate increases alone. It is absolutely

imperative that Hydro management contribute towards the building of a stronger equity base through a number of non-rates initiatives including continued diligence in cost control, aggressive management of the labour force and an increased effort to manage payments to government.

The Board appreciates that Hydro is recognized as having a low variable cost structure and that a number of initiatives have been undertaken by Hydro to control its operating and administrative expenses including the signing of bargaining agreements that reflect labour cost savings to Hydro and the contracting out of services. However, the Board notes with concern the projected 10.6 percent increase in net wages and salaries from 1994 to 1998. The Board encourages Hydro to pursue with increased vigour, cost control and to decrease its costs through the Quality Improvements Initiative and the use of emerging technologies rather than looking to increases in rates to meet increased costs.

The Board further notes that Hydro has indicated throughout its application that savings have been achieved through the elimination of 518 staff positions. However based on the evidence presented at the public hearing, this down-sizing only equates to the elimination of 239 equivalent full-time employee positions. Therefore the Board directs Hydro to file all information in subsequent General Rate Applications concerning wages and salaries in an equivalent full-time employees format (and not a staff positions format) to ensure that the relevant context of this information is not lost.

The Board also notes that the corporate performance measures discussed in Section 17.4 are of great assistance in assessing the performance of Hydro compared to other utilities, even though the comparisons can never be direct nor exact. Accordingly, the Board encourages Hydro to continue to participate in benchmarking initiatives, to help identify and implement further efficiencies and enhancements in its operations as compared to other utilities.

The Board is cognizant of the uncontrollable nature of the removal of its exemption from the Corporations Capital Tax by the Provincial government and the difficulty of managing such a change. Payments made by Hydro to the Provincial government represent commercially appropriate charges, but must be managed more aggressively. The Board encourages Hydro to continue in its attempt to strengthen its financial position through improving its operational efficiency and cost control and notes that the Provincial government as a major shareholder has an important role to play in this effort.

In response to Hydro's questions posed in final argument whether Hydro had done everything it could to reduce operating costs, the Board is not fully satisfied that Hydro has indeed done so to the maximum extent possible.

April 15, 1996
Board Order 51/96
Page 29

Accordingly, the Board will recommend that Hydro:

1. Continue discussion with its employees in order to, through consultation, identify opportunities for further operational efficiencies.
2. Continue its evaluation of the Corporation in order to achieve an organizational structure that best reflects the company's current non-expansionary capital program and its positioning for competition and deregulation.
3. Aggressively manage its payment obligations to the Provincial government.

TAB 7

Manitoba Hydro
Needs For and Alternatives To
Appendix 9.3 - Economic Evaluation Documentation
IMPACT OF INFLATION ON WATER RENTALS

Energy Price Reference
Discount Rate Reference
Capital Cost Reference

NFAT 2012		Net Average Flow Related Revenue (Millions of 2014\$) - Water Rental				
FYB		Plan 14 - K19/C25/750MW (WPS Sale &Inv)	1.90% Inflation 2013 - 2047 [first 35 years]	Plan 14 - K19/C25/750MW (WPS Sale &Inv) - with 35 Year Inflation	Plan 1 - All Gas 1.90% Inflation 2013 - 2047 [first 35 years]	Plan 1 - All Gas - with 35 Year Inflation
2012		0.00	0.00	0.00	0.00	0.00
2013		0.00	0.00	0.00	0.00	0.00
2014		102.98	3.95	106.93	102.97	106.92
2015		101.10	5.87	106.97	101.09	106.96
2016		99.26	7.76	107.02	99.24	107.00
2017		97.30	9.60	106.90	97.67	107.31
2018		95.21	11.38	106.59	94.88	106.22
2019		95.14	13.40	108.54	92.94	106.03
2020		102.28	16.62	118.90	92.87	107.96
2021		102.84	18.98	121.82	91.04	107.84
2022		101.65	21.05	122.70	88.82	107.21
2023		99.33	22.85	122.18	86.63	106.56
2024		97.13	24.61	121.74	85.17	106.75
2025		101.75	28.21	129.96	84.68	108.15
2026		109.86	33.12	142.98	83.39	108.53
2027		109.90	35.85	145.75	81.53	108.13
2028		108.23	38.03	146.26	79.62	107.60
2029		106.31	40.09	146.40	78.17	107.65
2030		104.97	42.33	147.30	79.09	110.98
2031		103.31	44.41	147.72	76.69	109.66
2032		101.62	46.45	148.07	74.79	108.98
2033		99.84	48.40	148.24	73.05	108.46
2034		98.11	50.33	148.44	71.65	108.40
2035		96.43	52.24	148.67	70.76	109.09
2036		94.82	54.14	148.96	70.71	111.09
2037		93.20	56.00	149.20	68.71	110.00
2038		91.55	57.79	149.34	67.51	110.13
2039		89.94	59.57	149.51	67.44	112.10
2040		88.66	61.52	150.18	65.53	111.00
2041		86.66	62.92	149.58	63.76	110.05
2042		85.12	64.59	149.71	62.71	110.30
2043		83.76	66.36	150.12	62.68	112.34
2044		82.55	68.21	150.76	61.13	111.64
2045		80.70	69.48	150.18	59.60	110.92
2046		79.26	71.05	150.31	58.50	110.94
2047		77.99	72.72	150.71	57.64	111.38
2048		79.32	72.72	152.04	58.58	112.32

NFAT 2012		Net Average Flow Related Revenue (Millions of 2014\$) - Water Rental				
		Plan 14 - K19/C25/750MW (WPS Sale & Inv)	1.90% Inflation 2013 - 2047 [first 35 years]	Plan 14 - K19/C25/750MW (WPS Sale & Inv) - with 35 Year Inflation	Plan 1 - All Gas 1.90% Inflation 2013 - 2047 [first 35 years]	Plan 1 - All Gas - with 35 Year Inflation
FYB						
2049		79.32	72.72	152.04	58.58	112.32
2050		79.32	72.72	152.04	58.58	112.32
2051		79.32	72.72	152.04	58.58	112.32
2052		79.32	72.72	152.04	58.58	112.32
2053		79.32	72.72	152.04	58.58	112.32
2054		79.32	72.72	152.04	58.58	112.32
2055		79.32	72.72	152.04	58.58	112.32
2056		79.32	72.72	152.04	58.58	112.32
2057		79.32	72.72	152.04	58.58	112.32
2058		79.32	72.72	152.04	58.58	112.32
2059		79.32	72.72	152.04	58.58	112.32
2060		79.32	72.72	152.04	58.58	112.32
2061		79.32	72.72	152.04	58.58	112.32
2062		79.32	72.72	152.04	58.58	112.32
2063		79.32	72.72	152.04	58.58	112.32
2064		79.32	72.72	152.04	58.58	112.32
2065		79.32	72.72	152.04	58.58	112.32
2066		79.32	72.72	152.04	58.58	112.32
2067		79.32	72.72	152.04	58.58	112.32
2068		79.32	72.72	152.04	58.58	112.32
2069		79.32	72.72	152.04	58.58	112.32
2070		79.32	72.72	152.04	58.58	112.32
2071		79.32	72.72	152.04	58.58	112.32
2072		79.32	72.72	152.04	58.58	112.32
2073		79.32	72.72	152.04	58.58	112.32
2074		79.32	72.72	152.04	58.58	112.32
2075		79.32	72.72	152.04	58.58	112.32
2076		79.32	72.72	152.04	58.58	112.32
2077		79.32	72.72	152.04	58.58	112.32
2078		79.32	72.72	152.04	58.58	112.32
2079		79.32	72.72	152.04	58.58	112.32
2080		79.32	72.72	152.04	58.58	112.32
2081		79.32	72.72	152.04	58.58	112.32
2082		79.32	72.72	152.04	58.58	112.32
2083		79.32	72.72	152.04	58.58	112.32
2084		79.32	72.72	152.04	58.58	112.32
2085		79.32	72.72	152.04	58.58	112.32
2086		79.32	72.72	152.04	58.58	112.32
2087		79.32	72.72	152.04	58.58	112.32
2088		79.32	72.72	152.04	58.58	112.32
2089		79.32	72.72	152.04	58.58	112.32
2090		79.32	72.72	152.04	58.58	112.32
Salvage Value						
PV @ 5.05%		1938.99	766.42	2705.41	1624.63	2214.46

Water Rental amounts per year from Appendix 9.3 page 91 (Plan 14) and page 99 (Plan 1)

Inflation Rate of 1.90% per year used as per Appendix 11.2 - MB CPI 2020 & on rate in the reference scenario