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MANITOBA PUBLIC UTILITIES BOARD

Re: MANITOBA HYDRO'S APPLICATION
FOR APPROVAL OF NEW ELECTRICITY RATES
FOR 2010/11 AND 2011/12

Before Board Panel:

Graham Lane - Board Chairman
Robert Mayer, Q.C. - Board Member

HELD AT:

Public Utilities Board
400, 330 Portage Avenue
Winnipeg, Manitoba
June 3, 2011
Pages 7230 to 7423

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1 --- Upon commencing at 9:36 a.m.

2

3 THE CHAIRPERSON: Okay. Welcome,
4 everyone. Good morning. Appears that summer's come
5 about three (3) weeks early, although it's long overdue.

6 Mr. Peters, today we have MIPUG witnesses,
7 Mr. Bowman and Mr. McLaren. Is that correct?

8 MR. BOB PETERS: Yes, sir, they are
9 scheduled not only today, but if -- if necessary, and I
10 will see how the day progresses, also our next time
11 together, which is on Monday, June the 6th. We had
12 scheduled the day for the MIPUG evidence. But we will
13 begin today and we'll see if we complete today or need to
14 carry it over to next Monday.

15 And I just remind the Board next Tuesday
16 CAC/MSOS witnesses will be here.

17 THE CHAIRPERSON: Mr. Hacault, we are
18 familiar with these witnesses from prior proceedings. So
19 if you want to begin, we'll have Mr. Singh --

20 MS. PATTI RAMAGE: Mr. Chairman, before
21 we get into that, there's a matter from yesterday I -- I
22 wanted to put on the record and correct the record. In
23 reviewing the transcripts from yesterday at transcript
24 page 7,619, and I've spoken to the court reporter, this
25 was regarding our exchange regarding the export

1 contracts.

2 And, if you recall, we -- Manitoba Hydro
3 indicated we'd take that under advisement. The -- the
4 undertaking, however, in the transcript indicates that
5 Manitoba Hydro is to file the -- the export contracts and
6 that's something that is still under advisement right
7 now. So the record should be corrected to reflect that.

8 THE CHAIRPERSON: Yeah, we do want you to
9 file the contracts but that is the comment that you made,
10 yes.

11 MS. PATTI RAMAGE: Yeah, we understand
12 the -- the request but we want to make sure that the
13 record is correct what the response was.

14 THE CHAIRPERSON: Okay, we'll wait. Do
15 you know when you'll be able to report on that matter?

16 MS. PATTI RAMAGE: I'm hoping early next
17 week we'll -- we'll be back with something.

18 THE CHAIRPERSON: The earlier the better,
19 please. Mr. Hacault...?

20 MR. ANTOINE HACAULT: Thank you, Mr.
21 Chair. Good morning, all. With respect to -- do we have
22 the witnesses sworn in already?

23 THE CHAIRPERSON: Mr. Singh...?

24

25 MIPUG PANEL:

1 PATRICK BOWMAN, Sworn

2 ANDREW MCLAREN, Sworn

3

4 THE CHAIRPERSON: Just for the benefit
5 for all in the room, Mr. Hacault, perhaps you could just
6 review what they're being qualified for.

7 MR. ANTOINE HACAULT: Yes, Mr. Chair,
8 what I had proposed with respect to Mr. Bowman and Mr.
9 McLaren, I understand that they've been previously
10 qualified in Manitoba, both of them, on revenue
11 requirements, cost of service, and rate design, so I
12 didn't intend to go through any of their qualifications
13 or experience in -- in that regard.

14 There are, however, with respect to Mr.
15 Bowman and Mr. McLaren, some -- two (2) or three (3)
16 additional areas which I'd like to have them qualified in
17 which they have not previously been qualified as I
18 understand.

19 And I would intend to briefly go through
20 those matters so that all parties have information with
21 respect to those additional areas, which really arise out
22 of the, I'm going to say, risk context of this hearing.

23 THE CHAIRPERSON: Please.

24 MR. ROBERT MAYER: Could you tell us what
25 it is you intend to ask for qualifications on --

1 MR. ANTOINE HACAULT: Yes.

2 MR. ROBERT MAYER: -- in addition to what
3 you already told us.

4 MR. ANTOINE HACAULT: Yes, Mr. -- Mr.
5 Mayer. With respect to Mr. Bowman, the three (3)
6 additional areas which I would seek to have them
7 qualified in is power system planning, or sorry Mr.
8 Bowman, power resource modelling and generation project
9 planning.

10 With respect to Mr. McLaren, the other
11 area is power resource planning.

12 MR. ROBERT MAYER: Thank you, sir. I'm
13 aware of Mr. Bowman's activities, particularly in the
14 Yukon and the Northwest Territories, so I have some
15 knowledge of that but I have no idea where the other
16 parties stand.

17 THE CHAIRPERSON: So we'll poll. Mr.
18 Williams, do you have any problems with this?

19 MR. BYRON WILLIAMS: With the
20 qualifications as framed, our clients have no objection.

21 THE CHAIRPERSON: Mr. Gange...?

22 MR. WILLIAM GANGE: That's fine from our
23 perspective.

24 THE CHAIRPERSON: Ms. Pambrun...?

25 MS. DENISE PAMBRUN: No objection from

1 the City.

2 THE CHAIRPERSON: Ms. Ramage...?

3 MS. PATTI RAMAGE: No objection from
4 Manitoba Hydro.

5 THE CHAIRPERSON: Mr. Peters, any
6 comments?

7 MR. BOB PETERS: No, sir.

8 RULING (QUAL):

9 THE CHAIRPERSON: Very good, you can
10 commence.

11 MR. ANTOINE HACAULT: Thank you, I guess
12 ind directly from time-to-time their experience then will
13 arise, but I -- I think the -- the breadth of their
14 experience across the country in those areas is -- is
15 something that's important and that we'll, maybe, just
16 incorporate indirectly so that all parties are aware of
17 the breadth of their experience in those areas.

18 THE CHAIRPERSON: That would be helpful.

19

20 (BRIEF PAUSE)

21

22 EXAMINATION-IN-CHIEF BY MR. ANTOINE HACAULT:

23 MR. ANTOINE HACAULT: Then perhaps, Mr.
24 Bowman, instead of dealing with that issue in isolation,
25 could you just give all parties here present an idea of

1 the extent across Canada of your experience with respect
2 to power system planning, power resource modelling, and
3 generation project planning?

4 MR. PATRICK BOWMAN: Yes. Thank you.
5 Good morning, Mr. Chair, Mr. Vice-Chair. Along with
6 working in cost -- revenue requirement, cost of service,
7 and rate design matters, I have previously testified on
8 areas in other jurisdictions, not in Manitoba, as -- as
9 noted.

10 This included as a witness for Yukon
11 Energy's resource plan in 2006, in which I had a lead
12 role in developing the plan and testifying for the
13 utility's board. This related to capital costs of new
14 development, load forecasts, determining requirements,
15 system modelling on both the reliability and capacity
16 side, LOLE, calculations of loss of load expectation, as
17 well as development of alternative supply options,
18 analyzing sup -- supply option costs and -- and benefits.

19 And I'm pre -- presently acting as an
20 advisor on the preparation of their 2011 plan. In the
21 Northwest Territories I've also appeared as an expert on
22 system generation requirements. In that instance it
23 related to system capability and reliability standards
24 for the system, the loss of load expectation similar
25 concept, and I've -- I've submitted evidence on this

1 topic in Newfoundland but it was in a hearing that did
2 not go to -- go -- go to hearing. It was a negotiated
3 settlement.

4 Outside of that broad power resource
5 planning, my -- since the last time I appeared before
6 this Board I was put on as a principal advisor to Yukon
7 Energy on a hydro inventory and comparative assessment in
8 2008. Out of that assessment and that inventory a -- a
9 project was selected to proceed, which is the Mayo B
10 hydro project.

11 And I was appointed Yukon Energy's lead
12 project manager for all planning phases of that project.
13 It's a \$120 million project that is one (1) of the
14 priority infrastructure projects under Canada's stimulus
15 funding. It's partially funded by Canada.

16 And my role on that as overall project
17 manager, for the planning stages, covered coordination
18 and -- and specific topical work on planning and
19 licensing stages, environmental studies, consultation,
20 budgets, stage reporting to the senior management of the
21 board, regulatory review, both before the environmental
22 regulator and the utility board, and preliminary
23 engineering matters, of which other folks were engaged as
24 specialists. Specific design matters were -- were not
25 within my -- my area and the overall planning budget for

1 that pro -- project was approximately \$10 million.

2 I've also played an advisory role in
3 negotiations for new power purchase agreements with
4 industrial customers for -- related to supply and related
5 transmission requirements. And in Northwest Territories
6 I had a principal role on the latter planning stages for
7 a major dam refurbishment, approximately a \$40 million
8 project, which is proceeding at this time, and appeared
9 as a witness, an expert, before the Mackenzie Valley Land
10 and Water Board on -- on that project, which is a board
11 that deals with licensing, not necessarily environmental
12 assessment, but it deals with the interface between
13 environment engineering and -- and economics.

14 I was also a -- one (1) of the team
15 negotiating with the construction contractor in setting
16 up the construction contract for that -- for that
17 project.

18 So that's a few of the different things
19 that I've been doing since last appearing here.

20 MR. ANTOINE HACAULT: Thank you, Mr.
21 Bowman. Similarly, Mr. McLaren, could you address the
22 breadth of your experience in power resource planning and
23 then also address your experience with modelling such as
24 SPLASH?

25 MR. ANDREW MCLAREN: Yes. Good morning,

1 Mr. Chair, Mr. Vice-Chair. With respect to the topic of
2 power resource planning, I've prepared submissions for
3 utilities in Northwest Territories and Nunavut in terms
4 of submissions for major capital projects,
5 generation/transmission projects, including the business
6 case assessment of those options relative to other supply
7 options and other project options that might be pursued.

8 I'm currently serving as an advisor for
9 the British Columbia First Nations Energy and Mining
10 Council on the BC Hydro technical advisory committee
11 related to their 2011 integrated resource plan. I'm also
12 participating as an advisor for -- for two (2) northern
13 British Columbia First Nations in the consultation
14 process related to BC Hydro's proposed Site C
15 development.

16 MR. ANTOINE HACAULT: Could you
17 specifically address the experience with respect to the
18 modelling similar to SPLASH?

19 MR. ANDREW MCLAREN: Sure. I -- in terms
20 of hydrologic modelling, I have some background through
21 graduate work on the topic. My graduate thesis focussed
22 on the development of multiple-criteria decision-making
23 models related to sustainable use of water rights in
24 Manitoba. This included consideration of risk-related
25 criteria. My advisor on that topic was Dr. Slobodan

1 Simonovic, who has participated in the SPLASH review. I
2 didn't participate in the SPLASH review, I want to make
3 that clear, but he was my advisor for that thesis topic.
4 And I have publications in the Canadian Water Resources
5 Journal on -- on this topic.

6 MR. ANTOINE HACAULT: Thank you,
7 gentlemen. Next, I want to address an issue with respect
8 to work for Manitoba Hydro that InterGroup has been
9 involved with. Could you or Mr. Bowman please address
10 that issue?

11 MR. PATRICK BOWMAN: Yes. The firm that
12 we work for, InterGroup Consultants, has worked for both
13 MIPUG and Manitoba Hydro for over twenty (20) years
14 concurrently. Our -- in -- in undertaking this work,
15 clients on both sides are -- are aware of that and kept
16 apprised of the -- the work that we do. And they're in -
17 - in very different areas. The work that InterGroup
18 undertakes for Hydro is -- the vast majority is -- is
19 environmental work, so -- socioeconomics, effects on --
20 effectively, effect on people and communities related to
21 -- related to projects that are being pursued. And by
22 far that's the vast majority of things that we work on
23 for Hydro.

24 And, as I noted, the same is true in all -
25 - all previous appearances here, including, for example,

1 the 2008 EIR hearing and any of the previous GRAs that
2 I've been to testify at. And it's -- it's not been an
3 impediment in any way to the work that we do on this is -
4 - there's no overlap.

5 MR. ANTOINE HACAULT: Thank you very
6 much, Mr. Bowman. Next I ask both of you gentleman to
7 please adopt the evidence that's been filed by each of
8 you in this proceeding as your evidence.

9 MR. PATRICK BOWMAN: Yes, at page 1 of
10 our evidence we set out that the evidence has been
11 prepared by each of us or under our direction. And so,
12 yes, I adopt the -- the pre-filed testimony as our
13 evidence.

14 MR. ANTOINE HACAULT: Mr. McLaren, could
15 you also do the same?

16 MR. ANDREW MCLAREN: Yes, as Mr. Bowman
17 set out that -- that is what's set out at the beginning
18 of the evidence and I can adopt it on that basis as well.

19
20 MR. ANTOINE HACAULT: Thank you. All
21 parties should have received an 11 x 17 sheet. We've
22 provided copies to Mr. Singh. And I'd ask that that be
23 marked as the next exhibit and ask Mr. Singh's assistance
24 in advising the Board which exhibit number we are
25 assigning that particular -- to that particular document.

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MR. BOB PETERS: Mr. Singh has indicated that MIPUG Exhibit 14 would be the correct number to assign to the -- the handout from Mr. Hacault at this time.

--- EXHIBIT NO. MIPUG-14: Handout from Mr. Hacault

CONTINUED BY MR. ANTOINE HACAULT:

MR. ANTOINE HACAULT: Thank you. Mr. Bowman and Mr. McLaren you will be going through the evidence. Could you in a couple of sentences just explain this document -- I know that you'll be dealing with it further in your evidence, so we have some context of why we -- it might be useful to keep this hand.

MR. PATRICK BOWMAN: Yes. In preparing for our appearance here today and going back over the extensive record of this hearing and the materials that we had filed, it -- it seemed that it may be helpful to set out our -- our evidence in the context of -- or at least our key conclusions in the context of a bit of a -- of a road map and how it fits into the structure of the way that we approached this assignment.

At a high level, when this hearing was initiated it was clear that it encompassed a GRA but it

1 certainly had some scope that went beyond that. And in
2 receiving and reviewing the material it was important to
3 us that this -- that -- that we start from the
4 perspective of a rate -- a rate-focussed approach. The -
5 - the key items that lead to this hearing, the key
6 matters that this Board has jurisdiction over, and the --
7 the past experience in appearances before here focus on
8 rates and ratepayers and implications of the various
9 things that are included in the filings for rates and
10 ratepayers.

11 And so in trying to assist with a bit of -
12 - of structure to understand the -- the conclusions and
13 the comments that we will make, we had wanted to try to
14 perhaps get something visual or graphical that people
15 could follow. The concept behind this document was simply
16 to emphasize that starting from the top of the -- of the
17 page that, you know, all -- all of the things that we're
18 dealing with and all the recommendations we're dealing
19 with do fit in the context of -- of rates. And the key
20 driving considerations on that are -- are set out, tests
21 like, stable, predictable, fair, and that from there on
22 down the -- the structure breaks down at different --
23 different topics.

24 In a lot of the jurisdictions in which we
25 work all that you would ever be worrying about at the

1 left side of the page, the test year, what are the rates
2 for this year. And when we leave the room we set the
3 rates for this year and we'll see you the time we need
4 them changed. There isn't necessarily a big focus on
5 long-term issues in a lot of the jurisdictions we work
6 and a lot of the legislation in Canada for different
7 utility boards.

8 In the case of Manitoba Hydro there is a
9 need to focus on the test years, 2010/11, '11/'12, in
10 this context. And we noted that, you know, Hydro's
11 requesting a certain set of -- of rates in the test years
12 and that's the only requested approvals that -- that are
13 here in respect of rate matters specifically. And -- and
14 the fact that a good portion of that has been -- already
15 been awarded as an interim basis.

16 As we flow down the page, our simple point
17 was that in -- in Box 1, if you like, would be the
18 traditional rate-related topics of -- of the test years
19 and things you would deal with on any utility. So folks
20 who are not used to dealing with Manitoba's regulatory
21 context would -- would typically understand they need to
22 deal with financial forecasts and cost of service and
23 rate design.

24 In the case of Manitoba, we add the red
25 box sort of below this, which is the concept of reserves,

1 which sort of spans this one (1) side -- the left side of
2 the page on the test years and what I'm going to talk
3 about now in respect to the right side of the page, which
4 is a much more long-term focus.

5 In this right side of the page, the long-
6 term rate issues, as I noted, this can be quite unique in
7 Manitoba. It can lead to quite expansive range of topics
8 that are dealt with in -- in general rate applications,
9 and it is consistent with the way Hydro's presented their
10 own case, that you don't look at the year, you look at
11 say an IFF or you look at a longer-term horizon.

12 It's not for the purposes of determining
13 what the rate's going to be in 2017. It's clearly for
14 the purposes of determining what the rate's going to be
15 today, but how does this all fit into the context of
16 where -- where things are going and -- and whether we
17 need to reflect that in the rates today, where we're
18 going, and whether we need to be doing things to -- to
19 nudge the trajectory, if you like, of -- of that longer-
20 term IFF.

21 Now, we deal with longer-term rate issues
22 in each Manitoba Hydro GRA. The one that's clearly of
23 more prominence in this is -- is the risk topics, which
24 we've got in -- in Box 3 there. They're dealt with in
25 Section 3 of our evidence. There is clearly added

1 material or added focus on that in this hearing, and we
2 set out some of our key points in that box. And it is
3 similarly situated above the reserves topic because it --
4 it similarly fits into this level of reserves and debt-
5 equity ratio and the like.

6 And the final thing that is on the box in
7 Box 4 -- or on the page in Box 4, we added similarly a
8 key issue to the long-term rate issues in Manitoba, not
9 something you'd spend very much time talking about at
10 all, in most jurisdictions, if you're in a rate hearing
11 is a power resource plan and -- and similarly -- and --
12 and NFAAT, and I'll have some comments later on about the
13 difference between those two (2).

14 In this hearing, it has clearly taken on a
15 fairly high degree of prominence. It was introduced by
16 Hydro in their -- their phraseology of -- of decade of
17 investment versus decade of returns in -- in coming up
18 with their -- their GRA themes, and it has received
19 considerable comment by -- by various parties here. And
20 we'll -- as we work through this we'll address the
21 specific conclusions we had on that -- on those topics.

22 But we thought it important to help try to
23 put the -- the various comments in a bit of a -- a bit of
24 a structure because they are wide-ranging and touch on
25 everything from, you know, near-term budgets to -- to

1 long-term developments.

2 MR. ANTOINE HACAULT: Thank you for that
3 overview, Mr. Bowman. Could I direct now your attention
4 to Section 1.2 of your evidence, and could you please
5 take us through -- for the parties, I'm just identifying
6 that as the area so people are aware what the area is.
7 I'm not going to be asking the witness to read or deal
8 specifically with the evidence as worded but there are
9 some highlights and points which I will be asking the
10 witnesses to -- to make.

11 And, first, could you deal with the
12 approach that you've taken to the hearing?

13 MR. PATRICK BOWMAN: Yes. I -- I
14 mentioned that -- when I reviewed the large ledger sheet
15 of paper that our approach in reviewing the case started
16 by looking at this in a rate context. And the other
17 thing that our evidence will highlight starting at
18 Section 1.2 is that it's -- it's consistent with the
19 scope that we are given by the clients who've retained us
20 for this hearing, which is the Industrial Power Users
21 Group.

22 In retaining us and in discussions with
23 them about items that were key to their concern and that
24 were intended to guide our review, they're -- the -- the
25 types of concerns that -- that industrial customers have

1 are set out in that section, primarily at page 8 to 9.

2 And just to -- to go over them briefly,
3 this group has been a longstanding group in Manitoba and
4 has consistently been -- retained InterGroup to look at -
5 - at rates in the context of stable and for unpredictable
6 transitions, including reserves, including not just how
7 are the rates changing today but how are we responsibly
8 dealing with reserves needed to ensure that we don't have
9 to face -- face problems tomorrow, and that we're not
10 just putting off an issue.

11 The group has -- has consistently asked us
12 to do it in the context of a strong regulatory oversight,
13 a PUB role to approve all rates and to -- and -- and to
14 address all relevant matters to rate making and with a
15 long-term focus.

16 At a -- at a principal level we've been
17 asked to ensure that we're looking at rates that are
18 necessary to operate the utility, rates that are
19 necessary to provide for reinvestment, at -- while at the
20 same time being attentive to ensuring that the rates are
21 not being put in place to -- to permit ill-advised
22 investments or -- or -- or other initiatives that aren't
23 core to providing electricity service. And to ensure
24 that the rates that are established are -- are fair
25 across and within customer groups.

1 The -- the specific positions of the
2 groups as set out by the presenters and -- and will be
3 dealt with in -- in final argument, but at it's -- at
4 it's core in dealing with industrial customers here, and
5 industrial customers in other places, I would say you
6 will find that the context for this type of review would
7 say there's a -- there's a willingness to face fair
8 prices that can change over time.

9 There's a strong interest in seeing those
10 prices change on a stable and -- and predictable basis
11 and that ensuring that those changes are determined to be
12 required to cover costs, that where there -- where
13 additional amounts are being paid to be put aside as
14 reserves to provide for stable rates in the future, that
15 they actually end up as those reserves, and that in -- in
16 setting the rates or requesting increases, all customer
17 costs are being treated fairly in sharing that burden.
18 And by -- by, you know, a -- a proper professional
19 analytical metrics.

20 MR. ANTOINE HACAULT: Thank you, Mr.
21 Bowman. Could you now deal with the -- I'm going to call
22 it test-year rates, what is really needed to run the
23 Utility?

24 MR. PATRICK BOWMAN: Yes, the -- the
25 test-year rates in this hearing, I can -- I can go

1 through the summary of the -- of the conclusions that we
2 have. The -- the test-year rates that have been
3 requested in this hearing require attention to both the
4 short-term and the long-term to understand the level of
5 rates that are needed.

6 Our recommendations at a high level,
7 reviewing the -- the piece and all the evidence that had
8 been filed at the time we prepared our evidence, was that
9 there appeared to be sufficient justification for the
10 rates Hydro had been requesting at an overall level.

11 In other words, the 2.9 percent per year
12 for two (2) test years, with the one (1) caveat or
13 caution that, given the present economic climate, one may
14 choose to err on the low side. But -- but overall, it
15 put one on a stable and predictable path that was
16 justified by the materials that had been filed.

17 Where we sit today is that of the two
18 point nine (2.9) and two point nine (2.9) that have been
19 requested, two point nine (2.9) and two point zero (2.0)
20 have been awarded. And we would say that that -- that
21 level of rate change is consistent with what we've put in
22 our evidence and so, you know, although it's not in our
23 filing in December, this is things that have happened
24 since that time. It would seem to us that that -- the
25 rate changes that have been awarded adequately address

1 the -- the requested approvals that Hydro had -- had
2 submitted.

3 With respect to the risk topics, which are
4 also relevant to that.

5 MR. ROBERT MAYER: Before you go on, Mr.
6 Bowman.

7 MR. PATRICK BOWMAN: Sorry.

8 MR. ROBERT MAYER: You very briefly went
9 over the fact that -- that both the rates that have been
10 so far set are interim rates only. We know your opinion
11 about the 2.9 percent on the first year. What are you
12 suggesting with respect to the interim order respecting 2
13 percent on the second test year?

14 MR. PATRICK BOWMAN: I -- I can get to
15 that in more detail but, at a high level, confirming the
16 two point nine (2.9) for the first year and confirming
17 the two point zero (2.0) for the second year would be
18 entirely consistent with the evidence that we filed and -
19 - and we haven't seen anything that would change that
20 recommendation.

21 And I would say that goes to the overall
22 level of rates. Now I was saying that in the context of
23 reviewing that -- that set of approvals, we were
24 attentive to both the short-term issues, the financial
25 forecasts for the test years, and we were attentive to

1 the materials that had been filed on the risk topics and,
2 to some extent, the materials that had been filed on what
3 we called Box 4, the power resource plan topics.

4 We had noted in our evidence that, as part
5 of moving forward, it's important that the Board have
6 confidence in Hydro's management of risks. This is
7 consis -- the -- the risk type of review is consistent
8 with the information we filed in 2008 -- as a matter of
9 fact, part of our testimony was cited in setting the
10 scope for this -- this hearing -- and ensuring the Board
11 has confidence in -- in Hydro's approaches, procedures,
12 models, that sort of thing, which -- which seem to be
13 critical to the long-term, efficient regulation of the
14 Utility. At the same time, we're also attentive to the
15 fact that the Board doesn't regulate Hydro's models, per
16 se.

17 Our -- I guess the -- the final topic I
18 would address in -- in that at a high level was in our --
19 our second box, the -- the reserves category. We have
20 some ques -- comments on the adequacy of reserves as we
21 move through the evidence. There's some question about
22 the con -- the concept of -- of form of reserves, and I -
23 - I'll -- I'll touch on those, too, but we're -- we're
24 suggesting that this proceeding can move forward without
25 finalizing or coming up with the exact concept for a form

1 of reserves, and that would suitably fit in an orderly
2 process, moving forward from -- from this point.

3 MR. ANTOINE HACAULT: Thank you, Mr.
4 Bowman. Could you now address your key conclusions,
5 which are found at pages, I believe, 4 to 7 of your
6 report, or the report?

7 MR. PATRICK BOWMAN: Yes. To sort of
8 finish this broad introduction, I've -- I've already
9 commented on the overall level of rates, which is the two
10 point seven (2.7) -- or two point nine (2.9) and two
11 point zero (2.0), pardon me. We set out our summary
12 conclusions starting at page 3, and set out that in -- in
13 -- contextually, one (1) of our conclusions is that Hydro
14 is very much at a critical juncture in its evolution. I
15 think that's consistent with what others in the room have
16 said.

17 This -- there -- there are matters that
18 are being addressed today that are -- are central to the
19 way that this utility will evolve over a -- a generation,
20 to use the term in the other context, and that the --
21 against this backdrop, our submission concluded that
22 Hydro does possess a stable risk-management regime and,
23 in all material respects, it appears adequate to dealing
24 with the risks inherent in its operation, that it -- a --
25 a key component of that is that Hydro possesses an

1 advantageous complement of assets to -- to back its
2 activities. And it has what appears to be a well-founded
3 recommended development concept that responds to the
4 long-term risks and opportunities that lie ahead. I'll
5 have more com -- comments on that as we go along.

6 Generally, we -- we'll also comment on
7 cost control, cost of service rate design structure and
8 the overall level of rates.

9 On risk-management practices, starting at
10 the top of page 4, the first bullet that we had. We
11 noted that this is the sort of most voluminous review of
12 Hydro's plans, procedures, structures, models that has
13 occurred before this Board and that, in our review of
14 them, and consistent with our view in all material
15 respects, it appears to conclude that -- that Hydro has
16 suitable and adequate approaches that - and practices.
17 There are some recommendations for improvement, some of
18 which we agree with, some of which are outside our -- our
19 area. And -- and it -- it would seem appropriate over
20 this hearing that -- that Hydro move forward to implement
21 those that have merit.

22 We're also cognizant of the fact that, in
23 practice, the management of a utility has to be left the
24 job of managing the utility, and no one else in this room
25 can really do it for -- for them on a -- on a very fine

1 basis. So keeping the management of the utility in
2 charge of -- of doing their job and being accountable to
3 this Board is -- is key, much more than imposing specific
4 answers in areas that -- that go to a very fine level of
5 detail.

6 In regards to risk tolerance, which was an
7 item that I think has been of less focus in this hearing,
8 probably unfortunately to us, we would emphasize that the
9 key measure of risk tolerance and whether Hydro's actions
10 are consistent with -- with the -- the risk tolerance
11 that -- that should be imposed is: What is the risk
12 tolerance of Manitoba ratepayers?

13 At the end of the day, over the long-term
14 and -- basically any of Hydro's actions to the good or to
15 the bad are going to be borne by ratepayers. It's borne
16 out in this jurisdiction, it's borne out in all sorts of
17 other jurisdictions that have gone to the good and to the
18 bad. There is very few, if any, instances we're aware of
19 where anyone other than ratepayers ends up picking up the
20 bill or -- or dealing with the implications of the
21 decisions of utility.

22 Using that as a benchmark, the risk
23 tolerance of Manitoba ratepayers, we concluded that
24 Hydro's thresholds for risk management, to the extent one
25 can understand them on a -- on a broad basis, are -- are

1 appropriate. And there's some other IR's we were asked
2 on that: How did we determine that? And -- and in -- in
3 what respect do we -- do we mean that conclusion? And --
4 and we can touch on that as we move along.

5 In regards to quantifying the risks to
6 Hydro, at the time we wrote the evidence we noted there
7 seemed to be no disagreement among the major risk authors
8 as to what were the major risks to Hydro. I think there
9 may be some confusion in regards to when one talks about
10 risks to financial returns versus risks to a development
11 plan, and we'll comment on that, but in general there's a
12 high degree of agreement among the different reviewers
13 about what Hydro's major risks are. And each of the
14 reviews seems to largely conclude, consistent with Hydro,
15 what the costs of -- of the key risks such as drought
16 are.

17 At the time we wrote that we had not put
18 sufficient focus on one (1) of the conclusions out of
19 Kubursi and Magee, which was in regards to the -- the
20 five (5) year drought, and I can make some comments on
21 that but I'm not sure whether it's -- it's -- the key
22 focus at this point. It is definitely the outlier when --
23 -- with Kubursi and Magee's numbers for a five (5) year
24 drought compared to the -- the remainder of the reviews.

25 Other than that, the one (1) year -- the

1 one (1) year est -- cost estimates of the worst drought
2 are consistent. The -- the calculations of probabilities
3 are not -- are not materially different in terms of what
4 should be a sufficient stress test in -- in terms of how
5 stressful is the droughts that exist, the -- the
6 reliability of Hydro's hydrologic record, and those types
7 of comments.

8 Given that quantification of risk we move
9 on to talk about what is the required level of financial
10 reserves. And I think this is a distinction that hasn't
11 been brought out in a -- in a major way, in part because
12 the two (2) have largely been viewed as synonymous before
13 this Board, that a 75:25 debt-equity ratio tends to be
14 pretty comparable to the cost of a five (5) year drought,
15 it tends to be pretty -- pretty consistent with what
16 people think Hydro should have aside in reserves. That
17 has been a relationship that's tended to be maintained
18 and tended to be in place for the last few reviews.

19 We wanted to make sure that there was some
20 thought put into that. That just because one comes up
21 with an estimate of a five (5) year drought, does that
22 now suitably become a target balance for reserve? And --
23 and we thought it's -- it's a pretty poor linkage.

24 It may be that you can come up with the
25 implications of a drought, but it may be that that level

1 of reserves is -- is insufficient or is excessive and
2 that you need to consider other implications like
3 probabilities. But also you need to consider the extent
4 to which that type of reserve-balance thinking -- and we
5 make some comments on things like capital adequacy
6 ratios, but that type of reserve-balance thinking is the
7 -- the sorts of things that one does when looking at
8 banks or other companies in terms of protecting lenders
9 and creditors. Not the type of test one would apply to
10 say: Is this sufficient to ensure stable rates to my
11 ratepayers?

12 And it may be wholly insufficient to
13 ensure stable rates to ratepayers or it may be excessive
14 and -- what -- what -- was the sort of question we put at
15 the outset and we'll have some more comments on that.

16 We did note that the KM report appears to
17 suggest a materially higher target financial reserve
18 level. And at the time we did the math in our -- in our
19 submission we would have viewed it as -- significantly
20 higher. I don't think I've heard anything that would
21 change that, possibly double the type of range that
22 others are -- are speaking of by the time the math is
23 done. And there is a -- an aspect of that conclusion
24 that jumps the rails, if you like, in terms of how one
25 develops power projects with a public utility in a

1 province such as Manitoba. That caused us a great bit of
2 concern, and -- and that we find some evidence on and in
3 answer to my IRs on.

4 On the formal financial reserves I
5 commented that, well, it's about five (5) under our key
6 conclusions, that the -- the work that is done in this
7 hearing and the quantification matters and the
8 probabilities are helpful in moving forward to thinking
9 about how one best sets up reserves but they don't --
10 they don't answer the question of what -- what form those
11 should take or how would they work.

12 We -- we suggest that it's not something
13 you can solve based on the evidences before you. It's a
14 suitable evolutionary topic that can be addressed over
15 time in an orderly manner. And -- and there's no
16 specific proposal before the Board, with the exception of
17 Mr. Matwichuk's, that is a very different type of -- of
18 proposal that is -- is largely a deferral concept and --
19 and I can relay comments on that.

20 At the bottom of page 5 -- about six (6)
21 we note that, commenting on Hydro's financial forecast,
22 there is -- when you get right into the test-year rates
23 and the budgets it's clear that there's sustained upward
24 pressure on Hydro's costs and that they're put -- some of
25 the upward pressure on rates arises from that.

1 We made comments on the need for cost
2 control. Mr. McLaren will deal with this as we move
3 through the evidence but it's -- it's a matter that
4 remains of concern. And we -- we continue to note that
5 it would seem appropriate at this time to -- to look to
6 have the sinking fund obligation removed from Hydro to
7 the extent that can be accomplished in dealings with the
8 government.

9 And, finally, about seven (7) -- at page 6
10 is -- is our high level conclusions with respect to cost
11 of service and rate design. And in that, we would say
12 the cost of service study that's there, in our opin --
13 professional opinion, is -- got all of the necessary
14 components and is a reliable tool.

15 We have some comments on the stage, the
16 steps in the cost of service study that one should be
17 looking to to interpret its results. The -- the final
18 bit of math that is done in coming up with the cost of
19 service results in Hydro's study reflects a certain
20 eleventh-hour policy-related adjustments that -- that we
21 think is -- probably undermines a bit the -- the value of
22 the tool as an -- as an analytical cost allocation tool.

23 But, nonetheless, the -- the rest of the
24 structure remains sound. And outside of a few very minor
25 comments that are the type of evolutionary things one

1 deals with in cost of service reviews, we would say it's
2 a tool that should be used. We spent a lot of time and
3 energy talking about it and developing -- getting where
4 we are.

5 And that, as -- as a result, the -- the
6 rate adjustments that are imposed, our -- our
7 recommendation is that we -- one shouldn't ignore the
8 results of an analytical tool like the cost of service
9 study and -- and that there's an opportunity to do a
10 limited but directionally appropriate rebalancing out of
11 this hearing to -- to be -- begin to at least implement
12 some of the outcomes of -- of all of that time and energy
13 that's been invested.

14 And the last thing that we'll touch on is
15 the billing demand concession. We went through the
16 evidence on the billing demand concession. We've got
17 some views related to assessing the rate, the reason the
18 requirement arose, what it means for financial
19 implications for Hydro, and the rate making principles
20 that would be -- we tied into that.

21 We're not here to comment on the -- the
22 policy consideration, if you like, or the impact on -- on
23 firms. As a matter of fact, next week one (1) of the --
24 one (1) of the firms that -- that did have a keen
25 interest in this program, Gerdau, will be here to present

1 and -- and can relay the -- the importance of that
2 program to them.

3 Our -- our review went to the -- the rate
4 implications, the reason the problem arises, and the
5 solution that was put in place.

6 MR. ANTOINE HACAULT: Mr. Bowman, I'd
7 like to draw your attention to the notes that you had
8 with respect to the outline of your presentation this
9 morning, specifically number 2 of those notes, and any
10 comment that you may have with respect to Manitoba
11 Hydro's efforts in its memos to staff with respect to
12 cost control.

13 That's at number 2 under your notes on
14 page 4 of your notes, the key conclusions. If you could
15 go to number 2.

16 MR. PATRICK BOWMAN: Well, I -- I
17 commented briefly. Mr. McLaren will go into more detail
18 that the evidence available to us at the time we prepared
19 our evidence appeared that Hydro faced ongoing challenges
20 in controlling its costs related to operating and
21 maintenance, and related to what's called normal capital
22 spending, the -- the capital spending outside of the --
23 the major projects.

24 There's been some additional information
25 that's been made available in this hearing. We've had a

1 chance to review that -- what seemed to support that
2 conclusion and in terms of the detail -- Mr. McLaren will
3 -- will address that as we move through the -- the
4 sections if you like.

5 MR. ANTOINE HACAULT: Thank you very
6 much. Mr. McLaren, then if I could draw your attention,
7 and for the parties, we're going to be dealing with the
8 test-year revenue requirement, cost of service, and rate
9 design topics. Moving firstly to the financial forecast,
10 which is Section 4 of the evidence at page 45. Section 4
11 of the evidence at page 45.

12 So, Mr. McLaren, if you could please bring
13 us through the comments that you have with respect to
14 financial forecasts.

15 MR. ANDREW MCLAREN: Certainly. As Mr.
16 Bowman indicated in this MIPUG Exhibit 14 that was passed
17 out this morning, these are the topics that one normally
18 thinks of as being part of a general rate application.
19 You look at the overall level of revenues and rates that
20 have been required, you examine a cost of service study
21 and you look at the rate design proposals. So we
22 included that as part of our evidence.

23 And Section -- Section 4 starts with
24 comments on the financial forecasts. And when we were
25 approaching this the first thing we did was we compared

1 IFF-07 with IFF-09-1 and IFF-10, IFF-07 being the one (1)
2 that was generally available during the prior GRA.

3 And when we did that comparison we made
4 two (2) comments at the beginning. One (1) is that with
5 respect to the debt to equity ratio, in IFF-07, that
6 75:25 debt-equity target wasn't achieved at all
7 throughout the entire forecast period in that IFF.

8 When we get to IFF-09 and IFF-10 we now
9 see we've -- we've achieved it in the -- in the test
10 years. So that was a -- a sort of key conclusion -- or a
11 key comparison that we made when we looked at those two
12 (2) financial forecasts.

13 And the second thing we noted was that the
14 -- in IFF-07 there's an assumption that beyond the test
15 years' annual general consumer rate increases of about
16 2.9 percent would occur from 2008/'09 to through
17 2017/'18. And in contrast when you get into 2000 -- IFF-
18 09 and IFF-10, the assumption is now of -- of
19 substantially higher average, consumer rate increase is
20 about 3 1/2 percent from the period beyond the test
21 years.

22 We also noted in Hydro's application that
23 they were characterizing the period through to 2020 as
24 the decade of investment. And so, in light of those
25 comparisons, of things that we had seen, changes in the

1 assumptions in the IFF going forward, and also the
2 characterization of the coming period as the decade of
3 investment, we focussed our review of the financial
4 forecast on -- specifically on elements that we -- we
5 thought were important during this decade of investment.

6 The areas that we focussed on included
7 operations and maintenance and administration expense.
8 We had a table in the evidence. It's Table 4.1, I
9 believe. Yeah, Table 4.1 on page 48, that reviewed
10 actual and forecast OM&A spending per customer from
11 2004/'05 through 2008/'09 and generally noted a -- a -- a
12 trend, an increasing trend in that statistic.

13 We also noted in a figure on the previous
14 page the trend in forecast OM&A costs going up
15 substantially. There's additional information on this in
16 Attachment B. And as Mr. Bowman noted earlier,
17 subsequently Manitoba Hydro has provided some
18 information, some internal memos that seem to confirm
19 that this is a -- a trend that they've also noted.

20 The second item that we reviewed was the
21 normal capital spending. In terms of our review of this,
22 again, we -- we took a comparison of normal capital
23 spending assumed in the capital expended fore -- capital
24 expenditure forecast for CEF-09-1, compared to CEF-07-1,
25 and, you know, made some comments that normal capital

1 spending appears to increase from about 375 million per
2 year to about \$413 million per year and this was also a
3 topic that was addressed in some of the internal memos
4 that Manitoba Hydro has subsequently present -- presented
5 in this hearing.

6 MR. ANTOINE HACAULT: Mr. McLaren, with
7 respect to those two (2) items, in your evidence do you
8 make any recommendations with respect to whether it's
9 necessary to continue to focus on OM&A cost control?

10 MR. ANDREW MCLAREN: Well, this is
11 certainly the -- one (1) of the key conclusions in this
12 area, and it's -- it's not a new topic for us. What
13 we've -- we've said and recommended is that, particularly
14 during this decade of investment when there's new capital
15 expansion going on at a scale that's not been seen for --
16 for many, many years that this is an especially urgent
17 time to focus on these types of items, given the context
18 of the decade of investment.

19 The final category we looked at in the
20 financial forecasts is a -- is a topic we addressed in
21 2000 -- the 2008 year area as well. That relates to the
22 cost of sinking funds. Mr. Bowman provided a high-level
23 review of this. We -- we asked some information or asked
24 for some information from Manitoba Hydro during IRs,
25 which suggested that the net impact, if the sinking fund

1 requirement were removed, would be approximately savings
2 of \$8 million per year and, given the magnitude of the
3 planned capital program in this current IFF and beyond
4 the current IFF, our evidence recommends that Hydro be
5 encouraged to continue to pursue the feasibility of
6 relief from these sections of the Manitoba Hydro Act.

7 MR. ANTOINE HACAULT: At Tab 12 of the
8 MIPUG book of documents, just for information of people,
9 there is a response that indicates that over time -- and
10 this was 2008, it's a \$93 million item. Is that correct?

11 MR. ANDREW MCLAREN: Yes, that's correct.

12 MR. ROBERT MAYER: I remember cross-
13 examination on that issue, and I think by Mr. Hacault,
14 and I thought I remember hearing that, basically, Hydro
15 put the money in and then took it out and spent it as
16 they pleased. I think that was the end result of the
17 cross-examination, so I'm not understanding why it's
18 costing them all this money.

19 MR. PATRICK BOWMAN: At a certain level,
20 neither are we. We're relying on the evidence that was
21 put before us, one (1) set of which indicates there's
22 limited, if any, practical implications of that section
23 of the act because one can put it in and take it out,
24 that, to the extent one would want a sinking fund, you
25 can do it without the act telling you to do it, and that

1 it functions in a -- a limited but important role in --
2 in balancing certain aspects of the exposure management
3 program, based on the evidence that we've heard.

4 But when one reviews numbers and IFF
5 forecasts you can see some very substantial sinking fund
6 balances forecast that don't appear to necessarily be
7 linked to simply balancing an exposure management program
8 and the numbers that Mr. McLaren is quoting of, you know,
9 costs up to \$93 million over the course of the IFF are --
10 are Hydro's numbers.

11 So it seems that possibly it's a -- it's a
12 difference in the way that one looks at the issue,
13 possibly it's a difference in the way that one
14 practically manages it versus the way that a computer
15 generates an IFF, or -- or it's an inconsistency we -- we
16 can't explain. Either way, I would say we -- looking at
17 the information that's been filed in this hearing in the
18 past, the financial markets had a high degree of interest
19 in sinking funds and it was the traditional way to issue
20 debt.

21 We know from other utilities we've worked
22 with some time ago, it is -- they're somewhat more
23 sophisticated now. It's not necessarily the way that a
24 lot of the Crown utilities are doing it. Some of them
25 have had their requirements removed, either by the

1 markets or by their legislation, and -- and those that
2 have -- that -- that we've dealt with would say it's a --
3 it's a benefit to them.

4 MR. ANTOINE HACAULT: Thank you. Are
5 there any follow-up questions on that or can we move to
6 the next item?

7 MR. ROBERT MAYER: I -- I'm not sure that
8 I'm a whole lot smarter. It's just that -- the \$93
9 million sounds like a lot of money to me and if it's a
10 funny number then I'd like to know why. If it's not a
11 funny number, I want to know why we need it. I'm
12 assuming that that is not evidence we can get from you
13 but I -- and -- and I certainly got a different
14 impression from the cross-examination of Hydro's
15 witnesses. However, I don't appear to have been the only
16 one.

17

18 CONTINUED BY MR. ANTOINE HACAULT:

19 MR. ANTOINE HACAULT: Thank you. Mr.
20 McLaren, could you now move on to Section 5 of your
21 evidence, which are comments on the costs of service and
22 general consumer rates? That's at page 3 of the pre-
23 filed -- at page 53, sorry, of -- of the pre-filed
24 evidence. Section 5, page 53.

25 MR. ANDREW MCLAREN: Yes, this is still

1 in the Box number 1 on the exhibit that was handed out
2 this morning in the second box in the cost of service
3 discussion there we have some key conclusions. But I can
4 -- I can briefly review what's in the evidence on this
5 point.

6 The -- the first thing we reviewed in the
7 evidence was that, you know, the core function of a cost
8 of service study is as an analytical tool to provide a
9 principled, analytical, defensible, replicable
10 measurement of the cost to serve customers with different
11 types of load. That's -- that's really the core reason
12 why you undertake -- a utility undertakes a cost of
13 service study.

14 We then reviewed the -- the methods
15 outlined in PCOSS-11 relative to directives on the cost
16 of service study arising from Order 116/08. And our
17 comment was that in -- in most respects the PCOSS-11
18 appears to be consistent with the methods and directives
19 approved in that order but there were three (3) specific
20 exceptions that we noted.

21 The first exception relates to the
22 treatment of gas-fired thermal costs -- thermal plants
23 and the fixed and variable costs of Brandon Unit number 5
24 where PCOSS-11 assigns these entirely to the domestic
25 classes, which is not consistent with Directive 19-C from

1 Order 116/08.

2 We provide some -- a discussion on this
3 point in response to an Interrogatory from -- from the
4 Board PUB/MIPUG-14, and we've made some recommended
5 changes to the PCOSS method here specifically related to
6 the treatment of natural gas generation costs where we
7 think it would be likely appropriate to share those costs
8 with export customers. But we also note that the likely
9 impact on the outcome of the RCC's ratios and the cost is
10 usually small and therefore we weren't particularly
11 troubled by that treatment. We thought it's an
12 improvement that might be worth making, but it wasn't
13 going to change, materially, the outcomes of the cost of
14 service study.

15 The second method relates to the DSM
16 costs, where PCOSS-11 assigns these costs to the customer
17 classes that benefit from the DSM programming. While
18 this isn't consistent with Directive 19-D in PCOSS-11, it
19 is the -- the method that's largely consistent with how
20 the PCOSS was prepared prior to PCOSS-08 and for previous
21 methods.

22 In PCOSS-08, initially, we had some
23 concerns about the revised treatment of DSM costs and
24 DSM-related energy in that cost of service study. We
25 made comments in the 2008 GRA on that point. From our

1 view, when we reviewed this method it -- it is a method
2 that's been used before and certainly preferable to the
3 other method that we took some issue with and -- again,
4 so we didn't have concerns with Hydro's proposal in this
5 respect.

6 The final point where it's -- where
7 Hydro's PCOSS-11 deviates somewhat from the directives of
8 the Board and -- in that order relates to the use of
9 export prices and revenues. PCOSS-11 uses the underlying
10 export prices and revenues from the IFF and this isn't
11 consistent with Directive 19-E from Order 116/08. But in
12 our view it was reasonable for Hydro to indicate a
13 preference for using export prices that concurred with
14 the underlying IFF. And so, again, even though it -- it
15 doesn't agree with the -- the Board's order, we thought
16 Hydro's treatment was reasonable in this regard.

17 MR. ANTOINE HACAULT: What's your key
18 conclusion with respect to PCOSS-11?

19 MR. ANDREW MCLAREN: So the key
20 conclusion we -- we came up with was that it's -- as I
21 said earlier, it's largely consistent with the methods.
22 Where it varies from the recommendations of the Board
23 those -- those deviations are either of -- of not
24 particular consequence, in our view, to the outcome and
25 so don't -- don't impact the -- the usability or the

1 reliability of it -- of the cost of service study as a
2 rate-making tool.

3 What did take -- begin to take some issue
4 with or have some discussion with, as Mr. Bowman
5 mentioned earlier, was the treatment of certain policy-
6 related items in the cost of service study. And I
7 believe it's about page 58 of our evidence where we deal
8 with this point.

9 Yeah, 58 -- 58 ta -- page 58 is Table 5.1
10 where we -- we prepare a summary of -- of some
11 adjustments that we would make to the presentation mostly
12 in the cost of service study to -- to --

13 MR. ANTOINE HACAULT: Mr. McLaren, before
14 you continue --

15 MR. ANDREW MCLAREN: Yeah.

16 MR. ANTOINE HACAULT: -- we might provide
17 the Board the opportunity to both get to the Table 5.1 at
18 page 58.

19 MR. ANDREW MCLAREN: Sure. Okay.

20 MR. ANTOINE HACAULT: Thank you. Could
21 you please continue?

22 MR. ANDREW MCLAREN: Sure. Table 5.1, I
23 would sort of characterize it as -- as reorganizing the
24 presentation of the cost of service results as much as
25 anything rather than -- than making specific changes to

1 methods.

2 Essentially what it -- what the table does
3 is it looks at the costs for a selection of customer
4 classes in the cost of service study. Table 5.1 doesn't
5 do all the customer classes but we did provide an
6 expanded version of the table that does do all the co --
7 all the classes in the cost of service study. And what
8 it does is it walks through the -- the costs assigned to
9 each of these classes on a functional basis.

10 We combine generation and transmission
11 into bulk power costs on line 1. We add in sub-
12 transmission related costs in line 2. And then line 3
13 adds in distribution and customer service related costs
14 to get to the total costs assigned to these classes. And
15 we present that information both in -- in dollar terms
16 and also in cents per kilowatt hour terms.

17 Then line 5 of this table shows the sales
18 revenues forecast for each of the classes in the -- in
19 the test year. And then line 6 compares the surplus or
20 shortfall between cost and revenues for each of those
21 classes prior to the allocation of any policy-related
22 credits.

23 And you can see on this -- in this table,
24 on Table 5.1, there's some customer classes that have a
25 shortfall: residential customers, general service medium

1 customers. And then are some customer classes that have
2 a surplus, notably, the GSL greater than a hundred kV,
3 and -- and, also, as one would expect, the export class.

4 Line 7 of this table calculates an RCC
5 ratio prior -- based on these -- based on these figures
6 and presents that information. And then below the table
7 on lines 8, 9, and 10 we show the -- the credits applied
8 with respect to some of these polic -- what we call
9 policy adjustments, which -- which are sort of
10 adjustments that occur not necessarily on a pure cost
11 causation basis but are reflective of the implementation
12 of certain policy directives either from the provincial
13 government or from -- or from this Board in previous
14 proceedings.

15 And then we -- line 11 provides the
16 surplus or shortfall calculation after the application of
17 those -- what we call policy-related credits.

18 MR. PATRICK BOWMAN: Mis -- Mr. Hacault,
19 I -- I'd only note at the end of that that the table is -
20 - can be quite intriguing to people who spend a lot of --
21 like looking at tables of numbers. To help make sure
22 that we could summarize the results, we've provided a
23 figure on the next page that simply tries to present this
24 in a cents per kilowatt hour basis, and it does the same
25 selected customer classes, although we were then asked by

1 the Board in PUB-18 to do this for all customer classes
2 and -- and if you want that we can drag that out.

3 But the premise was just to simply show
4 that cost of service study, using the methods that are
5 there, which we said are -- outside of a -- some very,
6 very small items that -- that we would say are -- are
7 worthy of some -- some debate, would show the costs for
8 each class in that -- that first column, bar or graph.

9 So residential has about three point seven
10 nine (3.79) for its bulk power. You can follow that bulk
11 power across and see how the different classes pay for
12 the bulk power system. It's basically equivalent. It's
13 basically under all the same set of rules. The only
14 difference really is your load shape in respect to how
15 you use bulk power costs.

16 The second category of sub-transmission,
17 which is -- we -- we break out mostly because not all
18 classes use it, so to get a consistent basis, we -- we
19 decided to identify it itself. And then distribution,
20 which -- which only the -- the smaller voltage cla --
21 classes use.

22 And so by the time you're adding that up,
23 you'd come up with a cost for residential about seven
24 point nine eight (7.98) cents, a cost for general service
25 small non-demand of seven five five (755), and you work

1 your way across to exports at four point two nine (4.29).

2 You can compare that against the thing
3 that's on the far right, which is the rate revenue. And
4 the rate revenue is directly out of forecast in the IFF,
5 and it shows that, you know, to residential's rate
6 revenue would average about seven point-o-eight (7.08)
7 cents a kilowatt hour and, again, all the way across to
8 exports, which are five point three nine (5.39).

9 And then in the middle there's this extra
10 piece to allow us to try to reconcile to what Hydro does
11 and it's -- it's the policy adjustments. And by far the
12 biggest one (1) there is -- is the decision to take all
13 of that export revenue on the right-hand side, the five
14 point three nine (5.39) that isn't needed to pay for its
15 costs, the four point two nine (4.29), that -- that one
16 point one one (1.11) cents and -- and funnel it back to
17 the other classes.

18 All the classes get the benefit of this,
19 industrial all the way down to residential. They get it
20 in -- in different proportions of -- by a sort of fancy
21 math, if you like. And you then can see once that po --
22 the adjustment is done to sort of offset some of the
23 customers classes where there's gaps remaining. And the
24 gaps are the difference between -- between the costs that
25 the customer imposes and the rates that it -- that it --

1 it pays.

2 So for something like general service
3 small non-demand, its rates don't quite cover its costs.
4 Seven point five three (7.53) cents is what it pays, and
5 point five five (.55) is what its costs are. But once
6 you take into account this point three eight (.38) cent
7 credit, which -- which is included in Hydro's cost of
8 service, they're actually above -- above their -- their
9 costs -- or their -- their adjusted costs if you like.

10 At its core our basic suggestion is that
11 some thought needs to be given to that middle column.
12 And in particular because it's not an allocation that is
13 linked to cost causation. It reflects at one (1) level,
14 and I'm going to jump to some of the risk concepts we're
15 going to touch here. It reflects at some level the
16 decade of return from the projects that were there
17 before. It reflects surplus revenue that's not needed to
18 pay the cost of exports and it reflects something one can
19 make a -- a discretionary decision about.

20 And when -- when some of these options
21 exist for things like, you know, paying down debt more
22 expeditiously, or building reserves, or getting ready for
23 a -- a decade of -- of investment, there -- there exists
24 to some degree that -- that export, that -- that
25 Limestone dividend or decade of returns on their past

1 projects that is presently being allocated out in the
2 cost of service study that may more appropriately over
3 time, if it's possible to transition to a higher rate
4 level, be used for these other purposes.

5 MR. ANTOINE HACAULT: Thank you. Mr.
6 McLaren, arising out of the analysis, are there any
7 recommendations which InterGroup makes with respect to
8 the across the board increase as between classes?

9 MR. ANDREW MCLAREN: Yes, Section 5.3 of
10 the evidence addresses our recommendation for -- for
11 treatment of rates for general consumers based on this
12 assessment we did of the -- the cost of service study in
13 particular, paying attention to the RCC ratios prior to
14 any of these policy adjustments.

15 We noted that there are -- there are a few
16 classes that have RCC ratios in excess of 100 percent
17 before any of these policy-based credits are applied.
18 Table 5.2 in the evidence summarizes those.

19 MR. ANTOINE HACAULT: And that's at page
20 61, page 61 of the evidence, Table 5.2.

21 MR. ANDREW MCLAREN: That -- that's
22 correct. And at the last column of this table shows that
23 there are several rate classes that are, you know,
24 including the general service large greater than 100 kV
25 and the street lighting classes that have RCC ratios

1 above 100 percent prior to any export allocations.

2 There are a number of rate classes that
3 are -- are pretty close to 100 percent. Some of the
4 general service small classes, ninety-nine point seven
5 (99.7), ninety-nine point eight (99.8). Normally we
6 would say those are, you know, pretty close to unity.

7 And then there are classes, notably the
8 residential and the general service large, zero to 30 kV
9 that are -- are quite a bit lower than -- than 90
10 percent, 88.8 and 88.2 percent.

11 On that basis, moving back to Exhibit 14,
12 which sets out the recommendation here, when we get to
13 rate design we noted that from -- from our perspective
14 there's a -- there's a reasonable basis to say that rate
15 adjustments -- any further rate adjustments coming out of
16 this proceeding should reflect these pre-policy
17 adjustment RCC ratios.

18 And in this proceeding that would mean
19 perhaps a -- a -- a directional shift upwards to rate
20 rebalancing some of these customers classes that have
21 very low RCC ratios and that -- that difference would,
22 you know, require a small adjustment downward
23 directionally for customers who have higher RCC ratios.

24 MR. ANTOINE HACAULT: Thank you. Mr.
25 Chairman and Vice-Chair, might this be an appropriate

1 time to take a break? Next, we'll be moving on to
2 comments on the industrial rate design.

3 THE CHAIRPERSON: Just to assist Mr.
4 Williams' plans, how much longer will your direct, do you
5 think, take?

6 MR. ANTOINE HACAULT: The plan, I think,
7 that we had advised everyone was that we hope to finish
8 by noon, and --

9 THE CHAIRPERSON: Very good, then. It's
10 a good time to take the break.

11

12 --- Upon recessing at 10:44 a.m.

13 --- Upon resuming at 11:07 a.m.

14

15 THE CHAIRPERSON: Okay, everyone. Let's
16 get going. Continue.

17 MR. ANTOINE HACAULT: Yes. Thank you,
18 Mr. Chairman. Hello all, again.

19

20 CONTINUED BY MR. ANTOINE HACAULT:

21 MR. ANTOINE HACAULT: We have now have
22 reached the -- talking about the box on the left-hand
23 side, still in Box 1, rate design, on Exhibit 14. And
24 dealing with the comments on the industrial rate design,
25 Section 6 of the evidence. Could you please deal with

1 that, Mr. McLaren?

2 MR. ANDREW MCLAREN: Yes. On sec --
3 Section 6 is page 62. The first thing we noted in
4 reviewing this section, or the material for this section,
5 was that the Board did not include any consideration of
6 an EIR within the scope of the current GRA, pursuant to
7 the Board's Order 17/10. We also noted that prior to
8 preparing this evidence Manitoba Hydro had notified the
9 Board that it's initiating further consultations with
10 customers and other parties in an effort to move toward
11 consensus on the terms and structure of industrial rate
12 design. And so, therefore, the evidence only addresses
13 rate design issues related to the demand billing
14 concession and winter ratchet.

15 With respect to the demand billing
16 concession, Hydro's application requires -- or requests
17 final approval of the demand billing concession. Hydro's
18 updated the figures, I believe, in an exhibit in terms of
19 the dollars that were involved in that program, which
20 came in somewhat lower than forecasts that were prepared
21 at the time of the filing.

22 Our evidence notes on this point that the
23 concessions related only to the demand portion of the
24 customer's bill, that energy rates were charged in full
25 throughout the period.

1 We also noted that Manitoba Hydro and
2 customers not affected by the demand concession or the
3 winter ratchet didn't suffer any adverse reces -- adverse
4 rate or revenue impacts, in particular, additional
5 revenues resulting from delays in removing the winter
6 ratchet exceed the revenues that would be foregone by
7 approving the demand billing concession as final.

8 And that, ultimately, the demand billing
9 concession program temporarily mitigated what we've
10 identified as a long-standing deficiency in the existing
11 general service large rate design that can create
12 unintentionally high unit energy costs when customers
13 lower their demand usage relative -- or, sorry, lower
14 their energy usage relative to their demand. And future
15 improvements of demand-related price signals are properly
16 addressed as part of this ongoing industrial rate design
17 discussion.

18 MR. ANTOINE HACAULT: Mr. -- Mr. Bowman,
19 could you address the issue of the impact by -- and I'd
20 like everybody, please, to turn to Tab 47 of the MIPUG
21 book of documents, Tab 47, page 242.

22

23

(BRIEF PAUSE)

24

25

MR. ANTOINE HACAULT: Now, I realize this

1 is not a document that was produced by InterGroup. It's
2 a response to an interrogatory asked by MIPUG of Manitoba
3 Hydro.

4 Could you please -- and I did, to a
5 certain extent do this in cross-examination, but take us
6 through this one (1) example of GSL -- I'm gonna say,
7 large over 100 kV and the reported impact on this table
8 of having the demand charge stay where it is relative to
9 a lower energy usage.

10 MR. PATRICK BOWMAN: Yes. As I noted at
11 the outset of this, our -- our review of the demand
12 billing concession program only covers one (1) aspect of
13 the program which is the -- the design of the rate, the -
14 - the implications for that rate for revenues to Hydro
15 and alternatives to Hydro, and the -- the types of rate
16 design considerations that go into that.

17 Our -- in -- in looking at that our --
18 it's not the first time that we would run across a topic
19 where somebody talks about having a -- a different rate
20 or two (2) different rates applied to service to the same
21 customer or the customer accessing different actual
22 prices for power. And when looking at that type of
23 situation the term, the concession, probably is a bit
24 distracting at the outset.

25 I think the basic principle here that

1 people need to understand when going through it was -- as
2 we sort of worked our way through it is this was not a
3 case of providing a customer with -- with cheap power.
4 In the context of a customer operating, they paid more
5 per kilowatt hour during this period they were receiving
6 the concession than they would have paid per kilowatt
7 hour in their production system before this period when
8 they were operating at full load. They're -- 10 percent
9 more was the cap, but it was more than they would have
10 paid, you know, on -- on an average or as their inputs
11 for their production process beforehand.

12 The -- the need for the program arose from
13 the fact that, given the type of rate design that's here,
14 that's been in place a long time, is not the most
15 flexible at dealing with certain types of situations that
16 can arise for customers and the demand charge is the key
17 problem with that. It's -- there are -- there are ways to
18 get around it, there are ways to improve the overall
19 industrial rate so this type of problem doesn't arise
20 again, and those are being discussed.

21 But with the -- with the type of rate
22 that's, you know, an old form demand energy rate that's
23 in place here you can have these strange effects on power
24 -- unintended effects on the cost of power under certain
25 operating circumstances. And that's what happened in --

1 in 2009. Frankly, it -- it happened for more than the
2 period the program operated.

3 And the result is that a customer who's
4 busy doing his production costing and trying to find the
5 way that he can deal with a -- a difficult market is
6 shifting his load around between his different plants and
7 the like, and finds that his average cost of power all of
8 sudden goes from, you know, goes up to ten (10) cents
9 because of the demand charges becoming such a dominant
10 piece of the bill.

11 This program was designed to -- intend
12 that -- that they don't go up to ten (10) cents, they go
13 up to something like, you know, 10 percent above what was
14 there when they were normally operating.

15 And I guess in that regard the dollar
16 values people are talking about -- we cite \$2 million in
17 our evidence, that was the number at that time. You've
18 since heard the program was about 1.3 million, not 2
19 million. And that \$1.3 million is a measure of the
20 difference of what the customer would have paid under
21 their operating regime had they -- had the normal rate
22 schedule been kept in place versus had this program been
23 put in place.

24 And in that regard it's a -- one has to be
25 very careful, it's a bit of a -- of a fictional number

1 because the -- the entire premise of the program was the
2 customer would not have continued to operate using that
3 amount of power absent the program. That wasn't the
4 application Hydro put in and the Board re -- recognized
5 that in its order.

6 Had these type of programs not been in
7 place -- and I'm not attesting to whether a customer
8 would have operated at a high level or a low level, that
9 -- you'll have to hear from the customers on that. But,
10 the premise is that this was an opportunity to sell the
11 customer some power at 10 percent more on an average
12 energy rate than they normally buy it and, absent that,
13 they wouldn't have bought the power and Hydro would have
14 had to deal with its power somewhere else.

15 And if you go to the Board's orders for
16 the SEP rates at that time, Hydro would have been selling
17 to the US for an average about two (2) cents, and I'm
18 quoting Board Order 156/09, which is the SEP rates that -
19 - that show the graph for that period.

20 So the -- in the context of that program,
21 I think it's -- it's quite important to -- to keep in
22 mind that -- that's it's not just a, you know, run two
23 (2) sets of -- of rate numbers against a load and see
24 what the numbers come out at.

25 With tha -- facing that set of choices, I

1 think the program that Hydro came forward with and -- and
2 proposed was -- was reasonable. It was probably more
3 limited than one could have justified but it was
4 definitely reasonable and it -- and it rose out of the --
5 the form of rate design.

6 I guess the other question that comes up
7 is, you know, a sort of who -- well, then who pays for it
8 co -- co -- sort of concept. And -- and I guess the
9 issue is -- is the revenues were higher than they would
10 have been had the program not been put in place because
11 the alternative was to sell the -- the power on the
12 export market.

13 But even then, the 1.3 million is -- that
14 -- that Hydro sort of can carry on its balance sheet is -
15 - is from a past year. It's not a question of -- of
16 imposing some, you know, special rider on someone today
17 to pay for -- for that amount. And if -- if anything, it
18 was in the midst of a period where the overall industrial
19 demand charge design as we set out was supposed to be
20 changing in any event, and got changed but it got changed
21 a lot later than it was supposed to.

22 And the result of that, the overall level
23 of revenues from the -- the class at that period actually
24 went up. The -- the delay in getting off the demand
25 charge led to customers paying something like 3.24

1 million higher than they would have paid. This program
2 led to them paying 1.3 million less than they would have
3 paid. And even that, you have to remember, is only
4 against that benchmark of -- if they had continue to
5 operate the way that they did under the program. And,
6 like I said, they'll have to deal with the evidence as to
7 whether they would have.

8 MR. ANTOINE HACAULT: Now, specifically
9 looking at the table, you mentioned a ten (10) cent
10 number. Is there anywhere where we can find with respect
11 to this class, and I appreciate there's other classes,
12 but on page 242 at Tab 47 for the GSL large could I
13 direct your attention to the table at the top where
14 there's a range of prices from June 2009 to November
15 2009. I realize they aren't all in the ten (10) cent
16 range but could you help us find the -- those numbers?

17 MR. PATRICK BOWMAN: Yeah. Now, my
18 understanding of this table, it was prepared by Hydro,
19 and my understanding is it's illustrative. It's not an
20 accounting of the actual period but it was intended to
21 give the example, looking down at the bottom of the page,
22 that this is a customer with GSL greater than a hundred
23 kV that would have faced approximately three and a half
24 (3 1/2) cent power, and as a result of this program paid
25 three point nine (3.9) cents for the power. And that's

1 the 10 percent differ -- deferral threshold.

2 MR. ANTOINE HACAULT: Okay, and where do
3 we find that on this table?

4 MR. PATRICK BOWMAN: The -- the very
5 bottom of the page, the bottom row, twenty-four (24)
6 month average, and it's off to the right-hand side, just
7 to the right of centre. If you look up those same two
8 (2) columns, one (1) called "Average Unit Energy" and one
9 (1) called "Deferral Threshold," you see when you get to
10 the top of the page the period during which the program
11 operated called "The Deferral Period," the first six (6)
12 rows.

13 And the intent of this table, my
14 understanding, was to show that if one is -- is not
15 implementing a program of this manner that the average
16 unit energy rate goes, you know, north of ten (10) cents
17 in a few of those months. And the deferral threshold
18 would have been three point nine (3.9) cents, which is,
19 again, higher than the average production cost input that
20 would have been there prior to the program.

21 MR. ROBERT MAYER: Where do I find the
22 north of ten (10) cents?

23 MR. PATRICK BOWMAN: It's under the
24 column called "Average Unit Energy." I'm on page 242 of
25 Tab 47. It's under the column called "Average Unit

1 Energy." And you'll see the first row is 2009, November,
2 where there was substantial load, 14,000 kilowatt hours.

3 MR. ROBERT MAYER: I got that.

4 MR. PATRICK BOWMAN: And you work your
5 way across under "Average unit energy," it's about three
6 point nine (3.9).

7 That compa -- compares to the deferral
8 threshold of three point nine two two (3.922) and there
9 would have been basically, you know, two hundred dollars
10 (\$200) in deferral in that month.

11 But if you go down to August where this
12 customer was -- was having a certain re -- reduction
13 cutback in thi -- again, I -- I understand these are
14 illustrative numbers. They're not any customer. But it
15 was giving the example of a customer who -- who looked to
16 try to operate at a 1.7 million kilowatt hour level, and
17 you carry it across, you'll see their average unit cost
18 would have been ten point two (10.2) cents -- two (2) --
19 ten point two seven two (10.272).

20 And the -- the main reason if you sort of
21 follow back a bit is the billing demand of twenty-five
22 six seven nine (25679) was a demand that imposed by the
23 structure of the -- of the rate -- of the -- the rate
24 design of the -- the rate schedules, whereas they're only
25 using about four point nine (4.9) on -- through that

1 month.

2 Now, my understanding is even that is
3 probably not the best example of -- of the way that some
4 of these customers would have used this type of program.
5 The -- the more typical, as -- as I understand it, but
6 again, you want to hear this from the members themselves,
7 the more typical type of response was to try to keep it -
8 - say a day shift on but close the night shift.

9 So you may still be peaking at the same
10 level, you're just paying for that peak for all hours of
11 the day when really you're using it for, you know, an
12 eight (8) hour shift rather than a -- rather than a
13 twenty-four (24), in order to try to keep your -- your
14 day shift operating.

15 MR. ANTOINE HACAULT: Has the Vice-Chair
16 been able to locate those numbers?

17 MR. ROBERT MAYER: I've located it and
18 I've -- I've noticed now that I know where I'm looking
19 that when we're looking at November '09, the difference
20 between the deferred threshold and the average unit
21 energy cost is point zero zero zero zero two (.00002).

22 MR. PATRICK BOWMAN: That's correct, and
23 that's I think when -- finding -- like, again, I -- I
24 understand it's not act -- an actual customer's
25 operation, it's a set of illustrated numbers, but it goes

1 page. And I can sort of suggest these will go a little
2 bit faster than the -- the other part. The -- the
3 concept of -- of reserves in debt-equity ratio we've
4 noted before is a very unique concept in regulating
5 Manitoba Hydro.

6 There is -- there's nowhere else that
7 we've ever been involved with regulation where a rate
8 increase is justified on the basis of trying to help a
9 customer build -- or help a utility build its equity, its
10 -- or build it's, you know, its debt-equity ratio.

11 That's usually a matter that's up to the
12 customer to -- or up to the company to figure out its --
13 it's capitalization and to come in and -- and recover its
14 costs either for interest alone or for interest plus some
15 return on equity, depending on the form of regulation.

16 So in Manitoba we -- we have a bit of this
17 unique frame and, as a result, we have to look at things
18 a bit different than you might in some other places. And
19 on the reserves and -- and debt-equity ratio I think we
20 can walk through this in sort of three (3) steps.

21 One (1) is -- one (1) thing I'll comment
22 on is the present status in the forecast. The second is
23 on the sort of recommended required level. And the third
24 that I'll just briefly comment on, I think I've already
25 suggested, is the comment on form of reserves.

1 On the present status and forecasts, after
2 six (6) months of -- of hearings and however long of
3 filing documents it's -- it's a bit of a -- it's a bit
4 hard to be excited but I think it is a fairly exciting
5 conclusion and -- and people should be inclined to shout
6 from their rooftops to a certain degree, We're -- we're
7 there, 75:25 was -- was reached where -- how -- how many
8 years and how many hearings of trying to work through
9 this and -- and -- and the -- you know, the -- the targ -
10 - the target's been met. It doesn't mean it's -- it
11 doesn't have be atten -- attention to maintaining or to
12 figuring out what next, but it's -- that's a -- that's a
13 -- a dramatic conclusion and it's -- it's fairly exciting
14 to be able to sit here after, you know, involvement over
15 ten (10) years and our firm being involved for twenty
16 (20) years of people starting at ninety-five (95) five
17 (5) and -- and barely being -- you know, a couple of
18 hundred of million in reserves.

19 And it's -- it's worth noting the interest
20 coverage and capital coverage targets are -- are also
21 relevant and are -- are in line. On top of that we're
22 talking about adding an average of 200 million a year to
23 -- to reserves over the IFF period, when you work your
24 way through that the -- the present IFF and ending with
25 4.2 billion in reserves.

1 The evidence related to risk in this
2 hearing certainly spent considerably more time on drought
3 costs and on quantifying risks and on overlap of drought
4 risks with other factors. And if -- if anything, it
5 seems to have confirmed what -- what type of approaches
6 have been used in the past and -- and where we started
7 from. I will say this is actually an area where perhaps
8 our thinking has evolved a bit since we filed our pre-
9 filed testimony and I can sort of walk through that but,
10 in general, when one starts by saying, How are we doing,
11 the answer surely has to be, It's doing very well.

12 And I walk through that in three (3)
13 contexts. The first is -- arises from Manitoba Hydro
14 Appendix 15, which is a set of IFF forecasts looking at
15 alternative scenarios that are summarized in the main IFF
16 but aren't normally given all the detail. There was an
17 IR asked that said: Please show me all the details, show
18 me an IFF scenario. And one of those that's filed in
19 Appendix 15 is the five (5) year drought and it starts
20 with a forecast of saying --

21 MR. ANTOINE HACAULT: Perhaps at this
22 time I could just confirm, for the record, that we had
23 distributed to all parties a revised index a couple of
24 days ago. We had distributed it electronically to the
25 Board, as I understand it, and to all parties today,

1 which we've identified at -- as Tab 75.

2 So it could be at the end of the -- the
3 binder that was given. And the page numbers allocated to
4 those additional pages go from page 314 to, and
5 including, page 320. So, again, those documents could be
6 added to the MIPUG book of documents at the end, Tab 75,
7 pages 314 to 320.

8 Yes, please continue.

9 MR. PATRICK BOWMAN: Okay. In that --
10 those documents that we've added to the binder is the
11 projected operating statements and balance sheet related
12 to this scenario. They say "Five (5) Year Drought" at
13 the top of the page and they -- there's about six (6)
14 pages because it's a twenty (20) year horizon showing the
15 -- the scenario where a five (5) year drought is imposed
16 early in the -- early in the scenario. And I'm happy to
17 do it by walking through the tables but if -- if it helps
18 keep us moving I can just highlight the -- the main
19 conclusions.

20 We looked through this scenario, which was
21 provided by Hydro, and noted this is imposing the -- the
22 bad five (5) year drought, the 1987 to '91, which is the
23 one that has a bigger financial impact, even if it
24 doesn't include the worst year. And it's -- it's got an
25 inherent pessimism in it in that it says it happens right

1 away, so we've got to live with what we've got, no more
2 years to build reserves.

3 It's -- the drought is imposed from 2012
4 to six -- to 2016, and the scenario imposes no rate
5 changes above that that's already forecast. So there's
6 no rate response in here, no, you know, hearings to deal
7 with the fact that it's not raining.

8 In that scenario, without any other
9 changes, it shows that in the year after the drought,
10 2017, no further rate changes, you're back to a positive
11 net income and the lowest that your retained earnings
12 ever gets is about .6 billion, point five nine two (.592)
13 in there.

14 After that, you're in recovery mode and
15 your recovery, in this case, you are back up to 2.5
16 billion in reserves, the same as you started it with,
17 within nine (9) years at the end -- after the end of the
18 drought. And within fourteen (14) years after the end of
19 the drought, you're back up to 75:25, which, in this
20 scenario, is actually trying to get to \$5.5 billion in --
21 in reserves or in equity.

22 So there are a -- a number of things that
23 could move that sooner, if there were modest added rate
24 increases to the drought, as one would expect, it would
25 end up sooner than that.

1 But I think, at a high level of thinking
2 about the concepts of stress tests and the like, imposing
3 a scenario like this and saying, This is -- this is a --
4 a credible drought but it's very large, it's -- and
5 imposing it early in the sequence and running through it,
6 would say that, you know, nine (9) years to -- to pull
7 yourself back out of a five (5) year drought is -- is --
8 would not suggest that this is a sort of horrendous
9 outcome. And it could be shortened by some rate response
10 that one would -- would reasonably expect.

11 So our first pass was at -- was at that
12 level of the concept of stress test and -- and it's not
13 seeming to generate horrendous outcomes.

14 The second was when we were reflecting on
15 this in the context of other comments that have been made
16 in this hearing that things could be much worse. And one
17 (1) of the ways in which the comments have been raised is
18 it could be much worse because five (5) years may not be
19 the end of it. We look in the historical record and you
20 can find a fourteen (14) year period, from 1929 to '42,
21 that has more years of drought than not drought.

22 It does have some positive years in there
23 but in more years there's drought than not drought. And
24 so we said, Well, what -- how -- how does that fit into
25 the context of all this reserves? And in looking at that

1 we don't have an IFF scenario that runs it but we do have
2 the data that Hydro's provided on SPLASH model runs. And
3 the output of their model, which was distributed
4 elsewhere in Tab 75, the -- the one (1) page here that
5 people have been referring to a fair bit, shows the
6 adverse effect of the drought and it shows what the net
7 loss would be if, during that period, you were tending to
8 have an average \$200 million net income absent the
9 drought.

10 MR. ANTOINE HACAULT: So this I do want
11 to take you to.

12 MR. PATRICK BOWMAN: Yeah, okay.

13 MR. ANTOINE HACAULT: Page 312.

14 MR. PATRICK BOWMAN: Yeah.

15 MR. ANTOINE HACAULT: And could you
16 explain how you come to that number over that fourteen
17 (14) year period? So for all parties, Tab -- Tab 75,
18 page 312, it's that page with the flow years, the annual
19 system inflow, net revenue, and variation of net revenue
20 from average. So what do you do to come to your
21 conclusion on the net effect of that fourteen (14) years?

22 MR. PATRICK BOWMAN: Well, we're looking
23 in this table at two (2) columns. One (1) is called the
24 "Variation of Net Revenue from Average," the farthest
25 right-hand column of each of the two (2) -- two (2)

1 sections of it. And the other is the column called "Net
2 Revenue."

3 And this table, I think, can be sort of
4 easily misunderstood if one's not careful. The -- this
5 is not trying to report financial results from a -- a
6 year. What it's trying to do is to say if the flows from
7 1912, to start at the top, arose what would that look
8 like today under our current system, our current export
9 prices, our current complement of assets? What would
10 that look like today as compared to the average that we
11 model?

12 And you run all of them and you come up
13 with the average of zero of -- which -- in the final
14 column. But 1912 in particular --

15 MR. ANTOINE HACAULT: So where do we find
16 that, the zero?

17 MR. PATRICK BOWMAN: There's a row called
18 "Average," on the lower right-hand part which as you work
19 your way across ends with zero in the -- the right --
20 farthest right-hand column. That is the sum of
21 everything above it.

22 And it's saying that there are years that
23 are better than this and there are years that are worse
24 than this but the average is zero. In other words, it's
25 benchmarked to a particular level, it's -- it's IFF

1 independent if you like. And if you look, it's a first
2 year, 1912. You say 1912 was a good flow year and it
3 showed up in a good way and so our variation from the
4 average would have been 222 million, the first.

5 The second thing it tells you is one (1)
6 column back from that where it says "Net Revenue." And
7 this column is solely an arithmetic adjustment to the --
8 the final column -- they're exactly the same adjustment
9 off of -- on each year. And you can use this column, it
10 -- you know, it's developed out of SPLASH, it's not
11 developed for a particular IFF or a particular year but
12 you can use this column to tell you what would the net
13 income have been in the 1912 flow scenario had I
14 otherwise been forecasting a net income of 202 million in
15 that year. So all you're doing is adding two hundred and
16 two (202) to it, it's not really complicated.

17 MR. ANTOINE HACAULT: And where do you
18 get the two hundred and two (202) from this table, Mr.
19 Bowman?

20 MR. PATRICK BOWMAN: It's down at the
21 bottom of "Average," and it's telling you the exact same
22 way that that final column averaged to zero, the column
23 before it averages to two hundred and -- sums to two
24 hundred and two (202).

25 MR. ANTOINE HACAULT: So we go to the

1 bottom right-hand of the table where it's in bold and we
2 see the number two hundred and two (202) --

3 MR. PATRICK BOWMAN: Right.

4 MR. ANTOINE HACAULT: -- at the very
5 bottom right-hand corner?

6 MR. PATRICK BOWMAN: Correct.

7 MR. ANTOINE HACAULT: Thank you.

8 MR. PATRICK BOWMAN: So this table,
9 without getting into overlaps of compounding interest and
10 all the like, can be used to say if my IFF was otherwise
11 forecasting \$202 million in -- in net income what would
12 my net income be, given the -- the flow related changes
13 in each particular year?

14 Now using that concept you can move down
15 this table and look at the fourteen (14) year period
16 that's -- the over -- the -- the dramatic-looking series
17 of -- of years starting 1929 and going to 1942.

18 MR. ANTOINE HACAULT: And that is
19 illustrated at page 313 in a visual way with the green
20 bars, is that correct? And we see two big circles in the
21 -- I'm going to say, dirty thirties type of time frame?

22 MR. PATRICK BOWMAN: Yes, there's a five
23 (5) year drought followed by two (2) years of -- of
24 positive flow followed by a seven (7) year drought that's
25 been referenced here before.

1 When you look at these years and you add
2 them up, what you start to find is over these long-term
3 horizons droughts aren't tending to be at the drastic
4 level on a sustained basis. The droughts can occur at a
5 drastic level more than once in the -- in the series and
6 it can be for -- there for a few years but these
7 intervening years are actually quite important to looking
8 at the overall financial impact.

9 And if you go to the section of the
10 numerical document, the table, and add up those fourteen
11 (14) years, what you find is the total impact on -- on
12 net income had -- had you otherwise been forecasting
13 about \$200 million in net income would be about a \$700
14 million loss. Now, that ignores compounding interest,
15 but it would be a \$700 million net loss over that period,
16 some positive years, some negative years.

17 Now, I know that sounds considerably
18 different than some of the estimates of a long-term
19 drought we've talked about here, and -- and that arises
20 for two (2) reasons. One (1) is because you have the
21 intervening years when you take into account the sequence
22 that actually do have some positives. In this case,
23 there's two (2) good flow years. And the second is
24 because there are two (2) concepts that are being talked
25 about that lead to different numbers and that reflect a

1 fundamental thought process about how you deal with a
2 drought.

3 In the bigger type of numbers, like
4 Hydro's estimate of 2.5 billion, what you're saying is, I
5 was on an upward path, I'm no longer on that upward path,
6 I've dropped off of it, how far am I from the upward path
7 I would have been on. You can measure that as the 2.5
8 billion type of number.

9 And it's -- and it's not to say that's an
10 incorrect type of number. That is telling you the -- the
11 variation from where you thought you would have been.
12 But implicit in that set of analyses is that you are in
13 effect lamenting the fact that you weren't able to save
14 for a drought during a drought.

15 And I think the -- in a more sort of
16 common-sense basis what you'd be saying is, Those years
17 where I'm not in a drought I want to save for a drought.
18 Those years where I'm in a drought I want to survive. I
19 want to be able to make it through without having to tap
20 my reserves too much. I'm not going to spend a lot of
21 time fussing about the fact that I wasn't saving for a
22 drought during a drought.

23 And that's the type of number that you --
24 that will -- will lead to fourteen (14) year droughts
25 being \$700 million. Yeah, it would have been 3 1/2

1 billion off of the pace you might have liked to have been
2 but over that fourteen (14) period the 3 1/2 billion was
3 -- you know, wa -- it's a question as to whether you
4 would have ever needed it or whether it would have every
5 arisen and whether it's reasonable to impose on -- on
6 that -- during that fourteen (14) years the -- the
7 financial expectations that the people surviving the
8 drought are also saving.

9 MR. ANTOINE HACAULT: Do you have any
10 comments on if you wanted to, say, even avoid this net
11 loss of 700 million over that fourteen (14) year time
12 period, what kind of rate change might have been needed
13 to lead to kind of a break-even as opposed to 700
14 million?

15 MR. PATRICK BOWMAN: Well, we did -- we
16 can do some back-of-the-envelope calculations very
17 easily. Your -- your domestic revenue is in the order of
18 a billion dollars. So if you take that \$700 million loss
19 over fourteen (14) years, added revenue of about 50
20 million a year, 700 million divided by fourteen (14),
21 would keep you entirely out of a loss through that
22 period.

23 And added revenue of about 50 million a
24 year is equal to about a 5 percent overall rate
25 adjustment. So were domestic rates through that entire

1 period increased consistently about 5 percent from where
2 they would have been, you would come into and come out of
3 that fourteen (14) year drought with effectively the same
4 level of retained earnings. The drought wouldn't --
5 wouldn't have set you back.

6 And I guess our -- our comment on that is
7 if you're sitting here thinking about a drought of that
8 scale and magnitude and duration and the -- a basic gut
9 concern that it could be horrendous and we might be
10 resorting to provincial government guarantees and we
11 might be having to drive rates in a way that -- that is
12 disastrous for the Manitoba economy. It doesn't seem
13 that the evidence bears that out, given our starting
14 point, given the reserves that we have in place today.

15 MR. ROBERT MAYER: Okay. The \$700
16 million you're talking about, what year dollars are we
17 talking about?

18 MR. PATRICK BOWMAN: Well, these are year
19 in -- independent dollars. They're -- they're run for
20 one (1) scenario, so it's all benchmarked from the
21 concept of a net income. So if you started with the
22 concept that over that fourteen (14) year scenario your
23 IFF would like to show you adding 2.8 billion to
24 reserves, instead of adding 2.8 billion to reserves you'd
25 be drawing 700 million out of reserves. So it's -- it

1 hasn't got a -- a -- say, an inflationary effect in -- in
2 it.

3

4 CONTINUED BY MR. ANTOINE HACAULT:

5 MR. ANTOINE HACAULT: But I think the
6 Vice-Chair's question is, for example, in the flow year
7 1912 where it shows net revenue of 424 million, is that
8 \$424 million in 1912 dollars?

9 MR. PATRICK BOWMAN: No. No, no, no, no.
10 These are -- these are current year dollars to any year
11 you'd apply it to in -- in the IFF. There might be a
12 small escalatory factor but it would be -- it would be
13 quite small in that. So it's not 1929 dollars or
14 something of that nature. No, it's very much current
15 dollars in the IFF.

16 MR. ANTOINE HACAULT: Thank you. Could
17 you continue? I believe you've covered most of the first
18 two (2) points that you've mentioned. Now what about the
19 stress test of Kubur -- Doctors Kubursi and Magee?

20 MR. PATRICK BOWMAN: Well, yes, the --
21 the third thing that we had wanted to -- to think about,
22 given we're -- we're here having the opportunity to talk
23 about risk in way that we don't always take as much time
24 in -- in other hearings is whether that five (5) year --
25 the first scenario I talked about, a five (5) year

1 drought that's fully modelled with all of the interest,
2 you know, compounding interest effects and all, whether -
3 - whether it misses the boat on duration. So I've
4 touched that.

5 And the other is whether it misses the
6 boat in terms of severity. And we actually have fairly
7 little to go on in terms of -- of severity. We have some
8 qualitative information and we have one (1) quantitative
9 piece of data. And that comes out of the Kubursi/Magee
10 study.

11 And as I understand it, it would seem to
12 be qualitatively supported by Hydro, which is that when
13 Kubursi/Magee sought to impose a more severe stress test,
14 a worse drought than the worst on record, they did not
15 find that the financial effects got worse on Hydro. They
16 found that contractual provisions that permit you to
17 amend how you deliver power led to the financial effects
18 of a worse drought than the worst on record, over one (1)
19 year, the really severe year, being -- being no worse
20 than the year that you've already modelled, 1940.

21 MR. ANTOINE HACAULT: Now could you deal
22 with recommended levels with respect to 75:25 over the
23 long-term and how that relates to, I'm going to say, a
24 reserve for drought? I may be using the wrong words.

25 MR. PATRICK BOWMAN: Yeah. So we worked

1 our way through this and we said, Well that's -- this is
2 fascinating, and we're -- twenty (20) years later we're
3 sitting here with, you know, reserves that when you model
4 some droughts you end up with, you know, reasonably
5 positive results compared to the things we would have
6 seen in any of these past hearings.

7 So what does that say to the level of
8 rates or the level of reserves needed? And we
9 effectively came down to two (2) or three (3) types of
10 comments that are embedded in the evidence. The first is
11 that as a -- as a cross-check, having a sufficient level
12 of reserves, the 2.5 billion type of number today, that's
13 reasonably consistent with the way Hydro estimates its
14 cost of a drought, how far you are off the line, is
15 seeming to lead to a level of -- of reserves or a level
16 of protection that is pretty good.

17 That has tended to correspond to a 75:25
18 debt-equity ratio in the past. But when we look over the
19 longer term, the IFF scenario, it doesn't necessarily
20 correspond the same way. The -- the requirements to meet
21 a 75:25 debt-equity ratio actually, by the end of the
22 long-term IFF period with all the massive investment
23 we're talking about, actually exceed the estimates of the
24 five (5) year drought by the end of that scenario by
25 about a billion dollars.

1 So it -- this is shown best in the KPMG
2 evidence where they summarize it, Appendix J, but the
3 droughts at the end of the long-term IFF, 2029, are
4 around 4.5 billion in costs and 75:25 would say you need
5 about 5.5 billion in -- in reserves.

6 So there's a little bit of a discomfort
7 that those two (2) get a bit delinked as you go forward
8 and -- and it underlines caution we've had about -- about
9 using a -- a 75:25 measure as -- as -- as the overriding
10 factor. It doesn't undermine them greatly. They're not
11 horrendously different but it -- it's -- it's important
12 cross-check.

13 The other comment we had was that in a --
14 in a way the focus on absolute dollar levels may be
15 practical, may be easy to calculate, but it does seem to
16 miss some of the -- the key concerns we would have, which
17 is the ability to maintain rate stability through --
18 through a period of a -- of a drought.

19 People being asked to pay higher rates
20 today to build up reserves justified on -- on -- using
21 certain types of approaches, like capital adequacy ratios
22 in the -- in the KM evidence or the like, I think it's
23 important -- even if it's only -- even if it's of -- of
24 minimal mathematical effect today, it's important that we
25 try to work through the idea that you're putting away

1 reserves, not to make sure that the -- the lender in
2 Toronto is going to be protected but that your rates in
3 the future are also going to be stable even when these
4 things happen, that it's -- it's very much the -- the --
5 part of -- of sort of responsible rate regime. And I
6 think that focus needs to be tied into this and -- and
7 only with those longer-term IFFs and the like can -- can
8 one really assess that.

9 And, to some extent, if somebody wanted to
10 get fancier, some of the Monte Carlo type of tools that
11 have been discussed could be of value. They would take
12 some reorienting to say, Enough of this focusing on my
13 net loss. I'm not -- I'm not here to -- to spend time
14 figuring out rates to protect my lender. My lenders will
15 be okay. I'm here trying to figure out my ability to
16 maintain stable rates. And you -- you tweak, to some
17 extent, the -- the form of the modelling or the function
18 of it to really focus on your ability to -- to not have
19 to wallop people when that comes along.

20 And I think that is probably the -- the
21 main sum of the comments in respect of the -- the levels
22 of reserves. The only other thing I'd say on that point,
23 though, is if it was only those considerations I just
24 laid out, we could probably sit here and make a case that
25 you should have zero percent rate increases today because

1 of what I just said. We're not doing bad. We reached
2 75:25. And we're not necessarily saying that. And we're
3 not saying that for a couple of reasons.

4 One (1) is, over the longer term of the
5 IFF it's clear that higher-cost resources are coming on,
6 that there's load growth, that there is a need for the
7 system to evolve to paying for what it costs to have a
8 Conawapa on the system as opposed to a -- a, you know,
9 Pointe Du Bois' cost of power, to use an extreme example.

10 And the other is that just because you've
11 got the reserve levels that may be able to protect you,
12 it doesn't mean that ratepayers aren't benefited by a
13 continued focus on finding ways to help, you know, manage
14 Hydro's overall debt levels and keep those lower, keep
15 overall interest costs down, and building in an extra
16 layer of protection. All of that can be perfectly
17 reasonably justified even though you've reached a reserve
18 that is -- you know, you're in the ball park.

19 If we really got out of the ball park it
20 might be different but we're -- we're in the ball park of
21 -- of reserves that provide stable rates and -- and
22 consistent with the overall objectives of -- of the
23 clients that, you know, we work for and -- and quality
24 rate-making objectives, you'd look for the stable
25 transitions and stable changes.

1 And I guess the -- the added comment on
2 that is -- is those rate changes today can also to some
3 extent be justified by the premise that if we're
4 embarking into the new development era that I'm going to
5 talk about in a minute and we're embarking onto these
6 major projects, there -- there may be a benefit to
7 focussing our attention today, during the decade of
8 returns from Limestone for example, to prioritizing the
9 export revenues that come out of that -- those type of
10 projects and come out of the system, to helping pay down
11 the last layer of debt so that we're ready for embarking
12 on the next piece.

13 There's a good reason for a certain
14 reversion, at a professional level, to the thought of
15 pre-funding new projects. It really runs count --
16 contrary to a lot of regulatory principles about you pay
17 for what's used and useful to serve you and -- and that
18 that project will provide benefits over many years and --
19 and it would come in there.

20 But it's not necessarily an aversion to
21 saying -- in -- in helping prepare the Utility to be
22 ready to embark on something, whether it's a preferred
23 plan or a recommended plan, that -- that rather than take
24 above-cost export revenues, as we showed in the cost of
25 service section, and use them to subsidize a distribution

1 system, you might use them to help get some debt paid
2 down with interest cost benefits and -- and help you err
3 towards perhaps the higher end of the -- of the reserve
4 spectrum we're talking about.

5 And so, with all that combined, it's --
6 it's not that somebody will come in and bang the table
7 and say: You should have a zero percent rate increase.

8 MR. ANTOINE HACAULT: So I think you've
9 indicated prior in your -- or previously in your
10 testimony this morning that the form of those reserves,
11 you're recommending, would be something dealt with at the
12 next GRA. Now, could you deal with Mr. Matwichuk's
13 recommendations with respect to this issue?

14 MR. PATRICK BOWMAN: At a -- at a high
15 level, Mr. Matwichuk is -- is proposing something that
16 he's calling reserves and it's -- it's not necessarily an
17 inappropriate term but it's -- it's something that's
18 focussed on a very different set of concerns than -- that
19 we would tend to voice.

20 His proposal is more about deferral and --
21 and short-term stability, if you like. It defers and --
22 and amortizes certain things over five (5) years whether
23 you're in good years or bad. It -- it's more of a -- a
24 rote mathematical type of calculation. That's not a
25 criticism, it's just that it -- it works in that manner.

1

2 And it would appear to us to potentially
3 play a bigger role in stabilizing Hydro's net income than
4 it does in anything in terms of stabilizing rates for
5 ratepayers. Hydro's -- Hydro's form of regulation and --
6 and it's ability to address matters within its IFF, as we
7 currently have it, doesn't lead to us all, sort of,
8 getting distracted by a year of good net income or bad.
9 We tend to be able to look over the longer-term here.
10 And -- and as a result of deferring a bit from one (1)
11 year to the next to get your net incomes more stable does
12 -- doesn't seem to necessarily lend a whole lot of
13 benefits to -- to rate stability.

14 MR. ANTOINE HACAULT: Thank you. Mr.
15 Chairman, unfortunately I didn't actually predict my time
16 quite correct and I don't think we're going to be
17 finished in five (5) minutes. But I believe it -- it
18 wouldn't cause inconvenience to either start and -- and
19 quit exactly at noon if we want or we could start
20 earlier. Whatever is --

21 THE CHAIRPERSON: How much longer do you
22 think you'll be?

23 MR. ANTOINE HACAULT: It'll depend. I
24 think probably half an hour because the Board's concern
25 about the power resources plans and -- and, I'm gonna

1 say, the risk issue generally of tools. I have about a
2 page and a half of notes out of ten (10) that haven't
3 been dealt with.

4 THE CHAIRPERSON: Okay. We'll come back
5 at one o'clock then. Thank you.

6

7 --- Upon recessing at 11:53 a.m.

8 --- Upon resuming at 1:02 p.m.

9

10 THE CHAIRPERSON: Okay. Welcome back,
11 folks. Mr. Hacault...?

12 MR. ANTOINE HACAULT: Thank you, Mr.
13 Chairman. It's pretty nice outside to be in here.

14

15 CONTINUED BY MR. ANTOINE HACAULT:

16 MR. ANTOINE HACAULT: But, Mr. Bowman, we
17 -- when we took the lunch break you were about to embark
18 into the discussion -- I'll call it the general category
19 risk. So perhaps remind us in the table, this big
20 Exhibit 14, where you're at, and then continue, please.

21 MR. PATRICK BOWMAN: Yeah, thank you.
22 Good afternoon. In the large document we handed out the
23 topics of risk are under the long-term rate issues and
24 coloured blue, and they're intended to be situated as a
25 separate topic that feeds into the discussion on

1 reserves.

2 Now, we've had most of the discussion on
3 the reserves topic, so this is just to deal with a bit of
4 -- of extra items that arise in this proceeding. In
5 general, the review of risk that has taken place or that
6 -- that we were considering as we wrote the -- the
7 submission, we found out, somewhat challenging, and it's
8 somewhat challenging in particular because in most cases
9 when one comes into a -- into a rate proceeding you have
10 a set of requested approvals from the utility and you
11 test whether those approvals are -- are reasonable or
12 supported or not.

13 In the topic of risk, some of it bears
14 directly on the requested approvals but in a fair part of
15 the issues raised it's -- it's not only there's a
16 specific requested approval being made or assertion being
17 tested. It's -- some of it's been a more general
18 discussion of areas of interest and concern.

19 So finding the right way to -- to assess
20 and test this topic we found somewhat challenging when we
21 wrote the evidence. And you'll find as you work through
22 Section 3 of our evidence that it -- we spent quite a bit
23 of time trying to get some structure put on it.

24 The same focus I set out before guided the
25 work that -- the focus being on -- on ratepayers. And I

1 was asked to try to touch on the fact that now that --
2 now that a fair bit of water's under the bridge and we've
3 had a lot of evidence passed before here, whether we've
4 really learned anything new or done anything that changes
5 our conclusions.

6 And -- and to the greatest degree, the
7 answer is no. If anything, the things that we've heard
8 tend to underline the conclusions that we came to.
9 There's some topics that we learned bits and pieces about
10 that I think may evolve them a bit. I think I've already
11 touched on one (1) of those, which is the -- I think the
12 -- it has helped our thinking to spend some time on the -
13 - the question of what is the loss of a drought as
14 opposed to what is the adverse impact of a long-term
15 drought compared to the path you would have been on had
16 you not had the drought.

17 And that -- that, I think, has -- has
18 evolved as a topic in our own minds si -- since we wrote
19 it but it wouldn't lead to any different conclusions.

20 MR. ANTOINE HACAULT: So, in your view,
21 which two (2) topics has this hearing bridged or which
22 two (2) concepts?

23 MR. PATRICK BOWMAN: Well, our -- our
24 focus le -- led us to be looking at the -- both the
25 short-term and the long-term as set out in the table.

1 And -- and we find in the evidence that's been provided
2 and some of the questions, particularly the Chair's
3 questions to parties, has really emphasized that while
4 one -- we -- one can sit and talk about drought as a
5 risk, drought is by far and away the biggest single risk
6 to annual financial returns and that's -- was, you know,
7 an assertion over many years. Its confirmed, it's been
8 supported.

9 But it's an entirely different way of
10 thinking when you're talking about the long-term and
11 you're particularly looking to the topics we're gonna
12 deal with next, like building a new project. You can't
13 be sitting here saying I'm going to build Conawapa and
14 it's gonna be a great project so long as I don't have a
15 drought. You better be planning that Conawapa's business
16 case is robust enough to handle a drought.

17 So in that context it's something to be
18 managed. But if you really want to talk about the
19 overall risks to a -- a long-term, or a power resource
20 plant, or decisions about projects it's a -- it's an
21 entirely different context and you -- you want to be sure
22 that you're not getting confused between the two (2).

23 MR. ROBERT MAYER: Mr. --

24 MR. PATRICK BOWMAN: Yeah.

25 MR. ROBERT MAYER: -- Mr. Bowman, when we

1 talk about, you better plan Conawapa for a drought, but
2 wouldn't the construction of a facility downstream on the
3 Lower Nelson alleviate, to some extent, a drought because
4 you'd have that many more turbines using the same water?

5 My suspicion would be, depending on how
6 many of them could be used on the -- on a lower water
7 scenario, how many of the ten (10) once they're in
8 service, it would seem to me that that would certainly
9 alleviate conditions of a drought to some extent.

10 MR. PATRICK BOWMAN: I -- I try not to
11 answer questions like the economist with the two (2)
12 hands. But I think that it's not quite so
13 straightforward and there's really two (2) answers to
14 that question.

15 One (1) is, when you talk about a drought
16 as a -- a confluence of -- of, you know, bad events,
17 adding another plant to the Nelson doesn't give you a
18 diversity of -- of conditions. When one (1) plant is in
19 a drought, the other one's in a drought.

20 So if anything it actually is a bit of a -
21 - of a overlap. In some ways it exacerbates your
22 exposure to that -- that water regime. So at it's core
23 you gotta be really careful about that concept when
24 you're working with the same base and the same river
25 system. And that was some of the comments you would

1 have heard yesterday about diversifying your supply:
2 think about thermal, think about wind.

3 But at the same time it doesn't
4 necessarily mean that you've become a more risky
5 organization. And that's what I've noticed, in
6 particular, of interest from the KPMG report, I believe
7 it's Appendix J, where it says, Okay, you can have these
8 events and they're gonna happen in the same year but does
9 it make you more risky? And their conclusion out of that
10 was -- was, No, actually it doesn't make you more risky
11 because your system can be designed in a manner that
12 allows you to build up your protections for that -- that
13 one bad year or that five (5) bad years. And this
14 project that could have positive economics can actually
15 help you build the reserves faster to be able to
16 withstand it.

17 And so you -- when -- when they run their
18 scenarios in Appendix J, your report on Hydro scenarios,
19 it becomes a bit of a -- of a horse race if you like when
20 you start the scenario and you bring the project in it's
21 how fast is that project contributing to reserves versus
22 how soon does a drought happen that it needs the reserves
23 to -- to withstand.

24 And -- and overall they -- they seem to
25 have concluded and -- and I accept this is on the power

1 resource plans and the models people were running and the
2 data that -- as of that date, they would need to be re-
3 run by the time the project is proposed, but that your --
4 your magnitude of loss goes up in a bad year because of -
5 - of having multiple projects in the same watershed but
6 your ability to withstand it also goes up. And, if
7 anything, the latter become -- is a bigger factor than
8 the former.

9

10 CONTINUED BY MR. ANTOINE HACAULT:

11 MR. ANTOINE HACAULT: Thank you. I think
12 this brings us to the area within risk of -- models and
13 whether InterGroup had any conclusions with respect to
14 Hydro's model -- modellings such as HERMES, PRIM --
15 PRISM, MOST, and SPLASH.

16 MR. PATRICK BOWMAN: Yes, we addressed
17 this somewhat in the evidence and some of this also
18 reflects information that's come out through the hearing.

19 But in general our biggest concern would
20 be on the SPLASH model -- or our biggest area of focus
21 would be on the SPLASH model much more than, say, the
22 HERMES. When you focus on the type -- shorter-term
23 horizons and the operations of a utility it's a question
24 of optimizing or whether they can be doing better to
25 optimize their system but -- but, you know, billion-

1 dollar decisions don't get made on the output of -- of
2 HERMES. If anything, HERMES guides your decisions for --
3 for a week or a month and then you run it again and --
4 and you get to true up.

5 When you're talking about the SPLASH
6 model, which helps you make decisions about going one way
7 or another on -- on contracts or projects, very big
8 dollars turn on that one. So, if anything, our attention
9 turned more to SPLASH and -- and certainly there's also
10 more information available about -- about the SPLASH
11 model. There's actually -- we found quite a lot of
12 information about that model in the evidence. We were --
13 some we had been aware of before.

14 There is -- out -- outside of the -- the
15 matters that Hydro highlights, there is in -- in the
16 appendices, and I apologize for not having it handy, but
17 there is in the appendices a fairly major peer review of
18 SPLASH as well that was done not by Hydro but by the
19 Government of Manitoba when it used that model for
20 predicting water flow impacts related to Wuskwatim
21 development. And it brought in three (3) pre-eminent
22 experts in this field who provided them with comments.
23 And there's a -- there's a fair bit of -- of information
24 in -- in the -- that peer review process about what was
25 given to those experts as they were doing their -- their

1 assessment.

2 And so from that we -- we were able to
3 build, you know, a -- a reasonable understanding about
4 how the SPLASH model's approached and -- and how things
5 are done and, along with the record of this hearing, I
6 think, you know, at the level of -- of thinking through
7 the -- the logic and the approach, even if it's not in --
8 deep in the mathematics, we're able to form a -- a pretty
9 -- pretty good comfort about the way the -- the SPLASH
10 model works and to say that, from what we've seen, we
11 think that there should be a pretty high degree of
12 comfort with -- with SPLASH and its output.

13 Now, I -- I make that comment having been
14 involved in development of models like this, not quite as
15 complicated as SPLASH, but -- but for exactly the same
16 purpose. And I make that comment in light of the -- the
17 things we've heard, which includes a few pieces of
18 criticism people have raised, like the perfect foresight
19 topic that I should probably touch on for a minute.

20 But the main thing I would note is -- is
21 that, although there are aspects of the SPLASH model that
22 can -- will be said to be old school and deterministic
23 or, you know, not keeping up with the programming
24 capability of computers these days and the like, I -- I'm
25 not of the camp that would say throw it out because it

1 uses an older, you know, computer method.

2 The question is: Does it give reliable
3 results? And that information that was prepared and
4 provided in -- in the -- when -- to the government and to
5 the government's expert reviewers when the model was
6 being assessed under a fairly high degree of scrutiny --
7 this was the government needing to know that it had good
8 information so that it could take out -- undertake its
9 required consultations with, you know, Aboriginal peoples
10 in the area, Cross Lake and the like -- concluded that
11 when you look at actual results, when you look at
12 SPLASH's predictions, when you -- when you deal with
13 different methods of running it, it has a -- a very
14 reliable output and it corresponds very well with -- with
15 what happens in reality on the system. So, at -- at a
16 level of cross-check, it seemed to pass -- pass that
17 smell test.

18 And the other general-level comment I'd
19 make is we are very sympathetic and -- and in accord with
20 the comments that ICF made about models, that you have to
21 keep your eye keenly on what you're trying to use a model
22 for, that it's a tool, it -- it doesn't give you all the
23 answers, and you need to be able to understand it, you
24 need to remember what it's trying to be do, and be
25 careful of the questions you ask it to be able to give

1 you the answers to answer that question. You're not
2 trying to model everything, and you're not trying to
3 optimize for everything. You're trying to answer a
4 question, and as long as the model's able to do that, it
5 -- it satisfies the need.

6 If you increase the complexity -- ICF had
7 the comment about practicality. If you increase the
8 complexity too far, it takes way too long to run it, and
9 you won't be able to get the results. I -- I accept that
10 but that's not my only concern because give computers a
11 few years and they'll be able to run the -- the day-long
12 processing in an hour anyway.

13 The bigger concern is that you need to
14 also be able to have a high degree of understandability
15 and, you know, the -- the model that -- that we worked on
16 and helped develop for Yukon Energy, for example, we're -
17 - we're on Version 500 and something, if I remember
18 correctly, of the runs and you're comparing small
19 differences and you're -- you're trying to understand
20 what it's telling you. And when you get results, you
21 very much want to be able to go back into the run and
22 understand where they're coming from, especially if
23 they're not what you expect, because it's either telling
24 you something very interesting about your system you want
25 to learn or it's giving you garbage.

1 And you want to be able to go back into
2 the results and figure out which it is. You want to be
3 able to save the data from the run. You want to be able
4 to have a human be able to understand it all rather than
5 just say, oh, I inputted the formula, so I got a lovely
6 graph out the end and so it must be right. You can't --
7 you can't do that.

8 And so the -- the -- the absolute size
9 isn't only limited by computers, it's also limited by a
10 human's ability to run it, to understand it, and to make
11 sense of it.

12 MR. ANTOINE HACAULT: So is your message
13 then if there's going to be integration, you have to be
14 pretty careful about it?

15 MR. PATRICK BOWMAN: If you're going to
16 try to integrate -- I -- I wouldn't suggest that one
17 would want to focus on the advice of people who don't run
18 the models every day as to whether you should integrate
19 two (2) models or not. The people who run it every day
20 will have a good sense as to whether it's serving their
21 purpose as a tool or not.

22 And I -- from -- from that perspective
23 it's not -- an integrated model doesn't have any, you
24 know, an integrated model that can model the short term
25 and long term and in short time steps and all the other

1 technical aspects, doesn't necessarily have any inherent
2 benefit over anything else, as long as the two (2) -- the
3 two (2) models you would use instead of one (1) are
4 consistent. There's no -- no automatic benefit to having
5 -- having one (1) platform versus two (2).

6 I think at the end of the day our -- our
7 review was that it may be worth commenting on the topic
8 of the perfect foresight matter which seems to be, if
9 anything, the most -- the most focussed of the
10 criticisms, or common of the criticisms of -- of SPLASH,
11 and I'm happy to do that. I know we're -- we want to be
12 attentive to the time. But at the -- by the end of it I
13 think there should be a high degree of comfort that the
14 SPLASH model, particularly the way it's being used, which
15 is largely to deal with comparisons between cases, not
16 absolute values, but a comparison, how is that different
17 than this, is it -- it seems to be a tool that one should
18 have a -- a high degree of comfort with.

19 MR. ANTOINE HACAULT: Thank you. I'm
20 sure if there's people that have questions on cross-
21 examination, they'll explore that subject further. Could
22 you turn to Tab 75 and that green graph that we've been
23 referring to from time to time? It's at page 313. And
24 I'd like you to use that graph to have a discussion with
25 respect to the risk recommendations that Kubur -- Doctors

1 Kubursi and Magee made, such as, for example, water and
2 storage and minimizing average cost objective.

3 MR. PATRICK BOWMAN: If -- if people have
4 the graph, this was at page 313 of the MIPUG book of
5 documents, Tab 75. This is a graph we've used a few
6 times and -- and I think that I -- I probably don't need
7 to go over all the details of it but I would note that
8 when Hydro produces this type of graph, the focus is on
9 what is listed in black as the zero line, that, you know,
10 you could have better years and you could have worse
11 years, but what's your average. And -- and then put your
12 average into your IFF.

13 It's helpful to have a -- some sense of
14 the statistics behind it when you're assessing IFFs, like
15 the fact that the -- the mean and the median are quite
16 different in this graph. The -- the -- the most likely
17 scenario is that you're -- you -- you beat the mean,
18 there are more upward bars than down. So if you run an
19 IFF it may -- you may want to report your mean, but in
20 most years you should do better than that. In the years
21 you do worse than it you'll do much worse, but in most
22 years you should do better than that.

23 Those type of conclusions come out pretty
24 easily. What doesn't come out easily when you have a
25 zero line with -- so that everything is relative to zero

1 is that there is also an absolute cost to certain
2 actions. So if you talk about risk and you only look at
3 the graph with the green bars up and down, as a concept,
4 finding an action that narrows the height of the green
5 bars and brings them in tighter is reducing your risk.
6 It's leading to less extreme events.

7 But that doesn't tell you whether that
8 action over the long term may have a cost to you. All it
9 tells you is that your variability is reduced. And so to
10 try to get that concept across this graph in Tab 75 added
11 a solid black line. And a solid black line is just to
12 give an absolute reference.

13 And it's basically in this case saying if
14 you go to the -- the current IFF and you look out over
15 the years, the next eight (8) or ten (10) years, you'll
16 see that net income trends around \$200 million dollars.
17 And so you can draw that line, in this case at \$202
18 million below, and say that's my zero net income line for
19 a typical IFF type of year. It's not any specific exact
20 year but for typical IFF year in the scenario.

21 So now I've got green bars up and down.
22 I've got years where I've got, you know, droughts where I
23 still make net income. I've got years where I rate
24 droughts and I have losses. I have some years where I
25 make considerably more net -- more net income, none as --

1 as positive as the worst droughts are negative.

2 But now you can get across a se --
3 separate concept with this graph, which is you can reduce
4 the variability and, hence, what might be viewed as the
5 risk by taking an action that narrows the green bars.
6 But if it does it at the expense of the average you have
7 to be very careful. It's a lot like buying insurance,
8 and some insurance is worth it and some isn't.

9 And so a lot of the actions that one could
10 get their mind around here may tighten the green bars. I
11 think Hydro could probably come up with a lot of
12 scenarios that tighten the green bars and that do things
13 to reduce the variability but they may be very costly on
14 average and that would dramatically change the premise
15 for operating utility. It would change the economics of
16 new projects which have to be based on the average over
17 their life and it would change the level of rates we have
18 to charge people. Rates wouldn't be lower because it's
19 lower risk. They'd be higher because we're giving up the
20 average, which is the main -- the main point of setting
21 the IFF.

22 An example of this, as we understood it,
23 and -- and I admit it's possible we misunderstood it, was
24 Kubursi and Magee's suggestion on water and storage. If
25 Hydro made a point of keeping water higher than all of

1 their other models and all of their other wisdom and all
2 the other operating criteria tell them to, it's possible
3 you would reduce the size of those negative bars somewhat
4 but the long-term average would also be lower.

5 You would have a cost over time because in
6 a number of these years you would have a dead-weight
7 loss. You would have spillage that you can never get
8 back. Keeping water in storage just changes the timing
9 of the sale. It's a cashflow management aspect. But
10 spilling is a loss. You never -- you never get that
11 water back.

12 And so balancing those two (2) is a -- is
13 a important criteria. And ignoring, say, the
14 environmental effects or erosion or whatever else is
15 keeping Lake Winnipeg high, it's also -- if not done
16 properly, is going to lead to the -- the reduction in the
17 average.

18 Now, I think I heard at the end, Kubursi
19 and Magee say, No, that's not what we mean. We don't
20 mean give up your average. And if that's the case we'd
21 agree with them. Once -- once -- as long as you're doing
22 a bunch of actions that bring in your bars but don't give
23 up your average, great, let's -- let's all do that.

24 And I don't -- I -- I can't imagine that
25 it's not being done now. It's -- it's exactly the point

1 about managing risk. But things that require you --
2 things that lower the -- the average are -- are very
3 problematic.

4 MR. ANTOINE HACAULT: Could you deal with
5 minimizing average cost, which is something else I
6 believe Doctors Kubursi and Magee raised?

7 MR. PATRICK BOWMAN: I can try. We
8 raised a concern about this comment in our evidence.
9 Doctors Kubursi and Magee had suggested that the
10 objective function of one (1) of the models, but at the
11 end of the day they really said the way the entire system
12 is operated, be repositioned to look at minimizing
13 average cost rather than maximizing net revenues or net -
14 - net revenues, net -- flow-related revenues.

15 And this question was also put to Hydro,
16 who -- who indicated that they had a hard time
17 understanding it, which we had a hard time understanding
18 it as well. I don't know how it would work but I think
19 it reflects either a very simple or a very fundamental
20 misunderstanding of the system where Hydro is designing
21 its system to minimize the average cost to domestic
22 ratepayers.

23 As part of minimizing its average cost to
24 domestic ratepayers, at times it will take on costs where
25 the revenues exceed those costs, which means what's left

1 for domestic ratepayers to pay for is reduced. If you
2 have export markets that -- that'll pay you twenty (20)
3 cents for some power and you can -- you can, you know,
4 run your own turbines for ten (10) cents and -- and sell
5 that power, that increases your average cost of
6 generation. You just produced some ten (10) cent power
7 but you also made some net revenue out of it and you help
8 bring -- keep domestic rates down.

9 And I would have thought that that's a
10 pretty common concept. And I'm -- I'm -- like I say, I'm
11 not sure it's -- it's that far off of where Kubursi and
12 Magee may have intended their comments to go. You want
13 to operate your system to keep the cos -- the -- the
14 costs that are leftover for re -- domestic ratepayers to
15 be afforded to a minimum. In doing that, sometimes,
16 though, you incur costs that would increase this -- this
17 calculation of the average cost of generation and -- and
18 I don't think that's -- that's a problem. In fact, I
19 think that's part of optimizing the system.

20 MR. ANTOINE HACAULT: With respect to the
21 Kubursi/Magee recommendation on a rate rider, do you have
22 a comment?

23 MR. PATRICK BOWMAN: I -- I touched on it
24 tangentially earlier. A rate-rider as a concept is -- is
25 another word for -- for rate, effectively, they're --

1 they're mathematically equivalent and they're imposed on
2 the same basis in the places where they're used.

3 And so with respect to the -- the need for
4 a rate-rider, which is by another term a rate increase,
5 or the disposition of the rate rider and the design of
6 it, which is by another term cost of service and rate
7 design, it's -- it's all fully addressed in the -- in the
8 orange sections of our evidence.

9 If -- if there's a need for a -- customers
10 in Manitoba to pay more there are tools to impose rate
11 increases to do that. If there's a need to allocate who
12 pays that there are tools to do that. So it's not -- I
13 think the -- our concern if -- or the aversion to it is -
14 - is the implication that somehow it's something
15 different than a rate. It -- it's just a rate.

16 MR. ANTOINE HACAULT: Thank you. Before
17 turning to the last box, which is Box 4. I'll just ask
18 you, at pages 34 to 37 of your evidence you had commented
19 on four (4) risk-scoping questions.

20 Did anything arise in this hearing which
21 caused you to change the recommendations or your
22 conclusions with respect to those four (4) issues?

23 MR. PATRICK BOWMAN: Nothing has arisen
24 that causes us to change the conclusions with respect to
25 those four (4) issues. They're -- they cover thirty (30)

1 -- I think it was a little beyond thirty-seven (37)
2 because the fourth question was on quantification of risk
3 and that -- that took a little bit and I've already
4 spoken to that.

5 The first question was much more on
6 organizational structures, staff, policies, procedures
7 and the like, and it's not necessarily in an area that we
8 spend a lot of time reviewing or -- or have an expertise
9 on. I've never dealt with middle office organization
10 charts or anything of the sort.

11 The -- the second and third questions
12 though we merged and -- and focussed on the risk-reward
13 tolerance and the ratepayers -- ratepayers tolerance to
14 risk or acceptance of risk and willingness to bear risk
15 for the purposes of benefits. And that was something
16 that the Board put a question to us in the -- in the IR's
17 PUB-9 on Risk Tolerance, and we set out there our -- our
18 rationale in that regard.

19 MR. ANTOINE HACAULT: Okay. Thank you.
20 I don't propose to go further into that. If you --
21 there's nothing that's caused you to change your -- your
22 view or recommendations.

23 I'd like you now, please, to deal with the
24 last box on MI -- MIPUG Exhibit 14, it's on the right-
25 hand side, it's entitled "Power Resource Plan versus --

1 N-F-A-A-T -- NFAAT."

2 Could you please deal with those issues?

3 MR. PATRICK BOWMAN: Yes. This is dealt
4 with in -- embedded in the risk section in our evidence.
5 Our -- our sense is it merited some comment on its own.
6 It's taken on a fairly high degree of prominence in this
7 Hearing and -- and some fairly large numbers are -- are
8 involved.

9 I made the comment at the outset that in
10 reviewing the Power Resource Plan for Hydro, the current
11 one as well as the last number of them, it's pretty clear
12 that there is -- we -- we are somewhere within -- at a
13 fundamental juncture for Manitoba on the way the system
14 is going to evolve. And it's -- it's -- I use the word
15 generational. This isn't -- maybe not quite as big as
16 the first decision to go north but I suspect that we're
17 coming up on a decision that's going to change the way
18 the system evolves for -- for decades and it's -- it's
19 embedded in -- in how one deals with the power resource
20 planning topics.

21 Offsetting that is the fact that in terms
22 of the very specific projects or the act -- exact timing
23 or the way that they're undertaken, the details aren't
24 available to know exactly what the answer is. And so it
25 becomes a very challenging topic to try to deal with in

1 the context of a -- of a rate hearing.

2 I think one (1) of the things we would
3 emphasize at the outset is that, whether you're dealing
4 with the preferred plan or whether you're dealing with
5 the alternative plan that is included, most of the
6 dollars don't -- don't vary between those two (2) plans.
7 The alternative plan still includes well over half of the
8 dollars that are in the recommended plan. Both include
9 Conawapa, both include a bipole, both include various
10 other system developments and -- and DSM and the like.

11 The big variables, in dollars, is Keeyask,
12 but even more so -- it doesn't show up in the dollars,
13 but the biggest variable in the fundamental decision is
14 the cross-border transmission. And I think there are
15 some others who've -- who've sort of flagged that but I
16 would only underline and highlight it, that the -- the
17 key element that defines the difference on the long-term
18 path utility between the -- the recommended plan and the
19 alternative plan, as we can see, reviewing them, is the
20 degree of -- of integration and transmission you're able
21 to establish with the United States.

22 Under the -- I -- I can go through that in
23 some more detail but it's -- it's central to
24 understanding a lot of the questions about supply
25 diversity, about long-term contracts, and about the

1 extent to which we need to build, you know, different --
2 different type of resources in Manitoba.

3 But, having said that, it's still
4 challenging to think about how to deal with that in the
5 context of a rate hearing, where you're busy setting
6 rates for a -- for a -- test years. And so I'm -- I'll
7 start there and -- and my comments may get a bit broader.

8 On rate, we spent some time looking at the
9 major scenarios that have been provided, the -- the
10 recommended and the alternative. I think it's fair to
11 acknowledge that that isn't the only two (2) futures one
12 could conceive of. You could come up with other
13 scenarios. Some of them are -- are -- would be very
14 creative, some of them are pretty straightforward, but
15 that they form the, you know, the core of the evidence
16 that's available to us, and they -- the two (2) scenarios
17 do not indicate a material difference on the test-year
18 rates required.

19 It's not necessary to pick which
20 scenario's most likely to arise to know whether the 2.9
21 percent rate increases we're talking about are needed
22 today. So that can give a certain level of comfort that
23 in the -- in -- in terms of the -- the first decisions
24 that need to be made, it doesn't all hinge on figuring
25 out which of these arise.

1 The second thing that we note from the
2 rate perspective, and I've already touched on this, is
3 whether, regardless of which of these arise, we need to
4 be careful, from a principled rate-making perspective,
5 that we're not setting rates to try to pre-fund
6 developments that are -- are not yet in the works, and
7 definitely not yet providing service.

8 I -- I noted that you could make a case
9 that we could be doing more to -- to, you know, pay down
10 the debt of the last generation of projects but pre-
11 funding the next generation is a -- is a different
12 concept and -- and there was some discussion of
13 intergenerational equity and the like and it's -- it --
14 it does not seem to need to be or -- or well-suit the
15 decision on test-year rates.

16 The second area that we sort of talked
17 about is -- is the planning actions. What should Hydro
18 be doing today? Or what -- what principles should guide
19 the spending that's going on in the -- in the test years
20 and the efforts that Hydro's putting in and the -- the
21 actions or the -- the resources it's trying to put in
22 place?

23 And, at its core, our evidence points out
24 that, from our view, the power resource plan, including
25 the recommended plan, is credible enough -- it's a

1 credible enough opportunity with enough possible benefits
2 that one would have to advise Manitoba Hydro to continue
3 to protect the option to pursue it. And that is very
4 different than saying it's the right plan.

5 And I went through the same discussion a
6 dozen or more times when we were doing the project in
7 Yukon, that \$120 million generation project, by far the
8 biggest project the Yukon had ever taken on. It dwarfs
9 the size of its -- of its existing rate base, and in a
10 place where they're not interconnected to other systems.
11 So if you don't manage your system right and your loads
12 right, you can get yourself in -- in quite a bit of
13 trouble.

14 And at each step in the way, we had to
15 drag all of the decision makers back to the first
16 principles, that you're -- you're only making the
17 decision as to whether you're going to bother to continue
18 to protect the option to proceed with it or whether
19 you're going to stale -- scale back and get off that
20 path. And your thresholds for credibility go up every
21 time that the spending goes up, and your degree of
22 investment and risk into the -- the project better match
23 as you move along, the credibility of it; you don't just
24 spend without limit.

25 But those -- those are the key decision

1 points that you map out and that you have to follow along
2 the way. And you always have to build a certain degree
3 of confidence in the people making the decisions that
4 they're not choosing today to put a shovel in the ground.
5 They won't make that decision until they have a
6 construction contract negotiated usually, which is like
7 beyond environmental permits, and agreements with
8 communities, and export agreements, or whatever the --
9 the case may be on each development.

10 So when you sit and read a power resource
11 plan and you look at the opportunities that are there,
12 and the evidence that Hydro puts forward says, This path
13 involves \$10 billion in spending and it's needed to serve
14 our domestic load so it's really pretty tricky to get
15 around it -- we can poke and prod at different pieces of
16 it but it's pretty hard to get around that.

17 And this alternative path involves 15
18 billion in spending. I'm using quick numbers here. But
19 it establishes this other route. It has net present
20 value benefits and it puts us on a course that's more
21 consistent with where the province and the Utility and
22 the ratepayers might want it to go. It has evidence that
23 it would lead to lower and more stable rates in the
24 future, notwithstanding the fact that it builds more
25 plants on the same river. You have to give time for that

1 option to be considered and to be explored.

2 MR. ANTOINE HACAULT: Thank you. Could
3 you deal with the general subject of the difference
4 between reviewing plan and reviewing a project, NFAAT as
5 we call it, just briefly. And then I think you've got
6 one (1) or two (2) comments on long term contracts,
7 faster amortization, and that will conclude your
8 presentation.

9 MR. PATRICK BOWMAN: Sorry, this is the
10 last major area we look to address. And it's to
11 underline the fact that there is insufficient available
12 information to us. And in our submission there's
13 information available to anyone to be able to say which
14 is the right plan for Hydro to pursue or what projects
15 should get built. And it's premature in a planning
16 process to say thumbs up/thumbs down to any given piece
17 of this -- of this puzzle, or -- or at least to the major
18 pieces of puzzle that vary.

19 Having said that, that doesn't mean that
20 there's no relevance to a regulatory, or to a regulatory
21 review, of power resource plans where that type of action
22 is undertaken.

23 Mr. McLaren and -- we make a comment here
24 about -- about British Columbia, because they have a
25 different system than -- than some others, but I -- I

1 would just sort of, walking through it, where you have
2 utilities that are fully regulated and you have
3 regulators doing the -- the traditional role in capital
4 as well as rates, and -- and on -- on used and usefulness
5 of projects and setting on rate basis or the like,
6 typically private utilities, sometimes in respect of
7 crowns, the type of review that goes on for the things
8 that we're talking about here usually happens in two (2)
9 steps. And you'll even see this in the evidence that
10 goes on in Minnesota in reviewing a contract with
11 Manitoba Hydro.

12 In the first step, the a utility will come
13 to its regulator and -- with input from all sorts of
14 parties, usually quite a broader range than -- than may
15 typically show up to rate hearings and say, What is our
16 planning context and framework; what is our load
17 forecast, what are our system requirements; when are new
18 resources needed; what types of resources do we want to
19 consider to pursue; what types of portfolios of -- of --
20 of options exist, and they will -- how do we -- what type
21 of economic thresholds and tests will we apply; are we
22 talking about a utility development or a non-utility
23 development, or a call for power resources, or an
24 import/export agreement, or something of that nature, and
25 you'll scope out the framework and the -- the bounds of a

1 plan.

2 And at the end of that you end up with
3 these sort of not entirely concrete out of a -- out of a
4 -- a regulator, but very directional increases that --
5 that shape the type of plan that the utility is then sent
6 off to go and try to pursue and bring back its solution
7 within those bounds.

8 If you were in Min -- Minnesota when they
9 would -- to -- to the best of my understanding, and the
10 extent we've looked at it as a -- as an example when
11 dealing with Manitoba Hydro contracts, when they come
12 back they don't just hand a contract to the regulator and
13 say thumbs up/thumbs down; they have an earlier step in
14 which they frame the requirement.

15 I've been involved in this type of thing
16 in -- in -- in Yukon. As I note, it's happened here
17 before in 1990 with this -- to -- to some extent,
18 although that -- that actually erred (phonetic) towards
19 the other one I'm going to talk about.

20 But it's not -- this type of process is
21 not always undertaken with respect to Crown utilities.
22 They tend to be a little bit more policy oriented. And
23 it is not uncommon for governments to say: I'm not
24 establishing this broad plan in a regulatory forum. I'm
25 going to establish it by -- by policy or by working with

1 my utility to undertake it.

2 And, for example, the -- in -- in
3 Newfoundland they have, notwithstanding that, you know,
4 interested parties, ratepayers and the like, are -- were
5 very interested in trying to review a plan, it was very -
6 - made very clear, no, thank you. With respect to
7 setting the direction of the plan, the government will
8 work the utility and we'll set a plan, thank you. And
9 the regulator was -- was not invited into that topic. In
10 -- in, you know, other examples, that -- that type of --
11 that type of development process ha -- has occurred.

12 As we look at the information before us of
13 Manitoba Hydro we are somewhere between those two (2)
14 steps. We're not yet at a point where you're at this
15 second step that we're familiar with, an NFAAT or review
16 of a project, how does it fit. And we're somewhat beyond
17 the framework, that should we be thinking about a -- you
18 know, should we be protecting the option for a broader
19 plan with integration with the US, or -- or do we really
20 want to commit to further north or is it time to take a
21 pause and do thermal down south; that -- those -- those
22 broad directions, do we need to be Manitoba Hydro doing
23 it, or do we want to -- you know, do we want Manitoba
24 Hydro to develop the -- the wind in the lake locally or
25 do we want to further integrate the US and let them build

1 the wind, and we'll back it up with the hydro?

2 Those broader directions are -- are in
3 place. They set the framework for Hydro's preferred
4 plan, and -- and we haven't seen that they've been
5 brought before this regulator, or any regulator, to say
6 as part of a public review, is this the broad plan we
7 want to follow.

8 And so I make those comments -- it no --
9 it's not -- not to be read into a criticism. It's --
10 it's a reflection sitting in the room and trying to
11 understand how it is that parties can be effectively --
12 are both -- both correctly arguing it's both too late and
13 too early to review thi -- this plan, and I think that's
14 -- that's the -- the dilemma that people are having.

15 MR. ANTOINE HACAULT: I believe you can
16 now turn to the last two (2) or three (3) small points.
17 Firstly, your comments on long-term contracts and the
18 appropriateness and -- of the strategy of Manitoba Hydro
19 in that regard.

20 MR. PATRICK BOWMAN: There was a few
21 comments, and I -- I apologize, I -- I can't point to
22 them, but there was a few comments in some of the
23 different reviews that suggested that there was an
24 interest in testing Hydro's contracting strategy and
25 whether they really should be into long-term contracts as

1 much as they are, and whether they've increased their
2 risk.

3 But I -- I don't believe this has been
4 sustained as a -- as a criticism. I think most parties
5 have been on the side of saying long-term contracts for
6 dependable energy is clearly a risk mitigation tool, and
7 -- and we'd be on the same side of that. And it -- it's
8 consistent with the way that -- that we -- we've seen or
9 we would assess, from a ratepayer perspective, the -- the
10 risk to the utility.

11 You don't develop dependable resources,
12 and then sell them on a day-by-day basis. When you're --
13 you're sure you're going to have the power there, you --
14 you lock in early, just like you lock in say long-term
15 debt.

16 So on -- on that topic we didn't see that
17 a lot of -- tha -- that a lot of the arguments were
18 sustained, but we'd just add our voice to that.

19 MR. ANTOINE HACAULT: Next, dealing with
20 Dr. Kubursi's suggestion that economic life of hydro
21 plants may be shorter than the bricks and mortar. Do you
22 -- does InterGroup have any comments on that area of the
23 evidence?

24 MR. PATRICK BOWMAN: Yes. Trying to work
25 our way through this. Almost every jurisdiction we work

1 in is dominantly hydro, and I can't think of a single
2 example where I've run across any issue being raised or
3 any position being taken that would say that the economic
4 life of a hydro plant is likely to be shorter than bricks
5 and mortar. If anything, the typical argument is that
6 it's -- it's vastly longer, if not -- if -- if not, you
7 know, infinite in the context of the -- the degree to
8 which anyone reviews these things.

9 And I -- on tha -- on that type of -- of
10 example, I would -- I would go to the concept that a
11 developed hydro site, even one where the brick and mortar
12 have hit the end of their life, is still of immense
13 value; it has the existing water rights; it has the
14 agreements and relationship of the communities in place;
15 it has the infrastructure; it has all kinds of
16 opportunities to re-develop. It has, you know,
17 experience with the utility. It probably has
18 transmission in place. And it's -- there's just an
19 immense number of things that go along with -- with a
20 hydro plant that have economic lives that go way beyond
21 any specific piece of bricks and mortar.

22 And I was personally involved in an
23 example in the Northwest Territories where the utility
24 went out of its way to purchase what's called the
25 Bluefish Hydro Generating Station. It was developed by a

1 mine. It's the first -- first hydro plant built in
2 Northern Canada -- or, that's still operating, at least.
3 Developed by a -- a mining company. It was owned by the
4 mining companies up until about eight (8) years ago, and
5 they -- they sold it to the Northwest Territories Power
6 Corporation. It's basically at -- many aspects of the
7 plant are basically at the end of life, but you can't
8 understate the value that's still there with the -- the
9 options that come with owning that plant.

10 Just like the Power Resource Plan
11 decisions are all about protecting options and building
12 on options. There is an economic value to the option to
13 have that site, and to re-develop it, and to continue to
14 have it provide power for many, many years in the future
15 that goes way beyond a -- an accounting of the economic
16 bricks and mortar life.

17 MR. ANTOINE HACAULT: Thank you. And
18 just one (1) small point and final comment with respect
19 to wind and thermal as dependable resources, and any
20 comments you may have that with respect -- with respect
21 to that subject because Drs. Kubursi and Magee seem to
22 have a different view.

23 MR. PATRICK BOWMAN: Drs. Kubursi and
24 Magee made a comment on this, and -- and my recollection
25 is that someone else discussed out-of-the-money thermal.

1 Our view would be that hydro appropriately
2 deals with wind and thermal resources in calculating its
3 dependable energy. There is no -- I -- I'm aware of no
4 debate anywhere about whether energy from wind plants is
5 dependable; capacity is a different question.

6 Sometimes people consider the capacity is
7 zero; sometimes they will give it a nominal capacity
8 value and Hydro treats it as zero. And the quotes that
9 Kubur -- Drs. Kubursi and Magee pulled out in respect to
10 wind related to capacity -- but there does not seem to be
11 any dispute I'm aware of in -- in any power planning
12 community that would say that you don't treat the -- the
13 energy that you can get from wind over the course of a
14 year as dependable. The wind doesn't stop blowing for a
15 year. It may stop blowing for a day, or for an instant,
16 but it doesn't stop blowing for a year.

17 On the -- on the thermal side the comment
18 is somewhat different. I -- and I apologize for not
19 having the quote. But the question is whether -- it
20 isn't whether you can dispatch your thermal resources;
21 it's whether you should consider them as dependable
22 energy when you're doing your calculations in SPLASH and
23 you're determining your commitment to contracts.

24 And it's -- that comment seems to mix two
25 (2) concepts. One (1) is an engineering concept or a --

1 or a planning concept of what you consider your
2 dependable energy and how many kilowatt hours you have.
3 And the other is whether it's economic to commit those to
4 a sale, or to commit to a sale backed by those -- those
5 admittedly expensive kilowatt hours.

6 They -- the kilowatt hours that one can
7 get out of Hydro's thermal plants are -- are absolutely
8 dependable and they ought to be considered that way when
9 one sets up and runs a model. In the economic tests, you
10 need to consider whether you want to commit to certain
11 sales backed by those independent and all sorts of
12 economic considerations that go into it, like: What
13 price are you getting? What's your expected price of
14 gas?

15 You may still not make that as a
16 dependable sale. But if you go back to one of the --
17 some of the earlier hearings that we were at before this
18 Board, when the Brandon turbines were being put into
19 place, that -- they weren't being built because we needed
20 domestic dependable kilowatt hours; they were needed for
21 dependable kilowatt hours because it made the economics
22 work on a -- on enhanced export sales. That -- that's
23 the basis in which they were put in place.

24 So to ignore them now, or to take them out
25 of the planning framework because -- because potentially

1 they're not in the money, or potentially they could lead
2 to losses, you do that by dec -- making your decision of
3 what to commit to; not by whether you call them
4 dependable when you're planning.

5 MR. ANTOINE HACAULT: Mssrs. Bowman and
6 McLaren, thank you very much. Thank you all for your
7 patience during this presentation.

8 And they're open to questions.

9 MR. ROBERT MAYER: Just before we get
10 into cross-examination, go to page 7 of your written
11 evidence. And this is just for future reference.

12 INCO and its predecessor, the
13 International Nickle Company of Canada Limited, have now
14 been relegated to the pages of history. Vale has ordered
15 the removal of the name and the insignia from the T1
16 headframe, and it appears no place in any of Vale's
17 documentation any longer.

18 MR. PATRICK BOWMAN: Mr. Mayer, that's
19 our understanding, as well. I believe it was not the
20 case as of December 10th, 2010, however, in terms of the
21 formal entity.

22 THE CHAIRPERSON: All right. We're just
23 going to take two (2) minutes, and then we'll be with Mr.
24 Williams.

25

1 --- Upon recessing at 1:51 p.m.

2 --- Upon resuming at 2:02 p.m.

3

4 THE CHAIRPERSON: Okay. Thank you very
5 much, Mr. Hacault. We're now moving to Mr. Williams.

6 MR. BYRON WILLIAMS: Yes. Thank you and
7 good after -- yes, thank you and good afternoon, Mr.
8 Chairman and Mr. Vice-Chair, and Mr. Bowman and McLaren.
9 Long time no see.

10 Mr. Chairman, just to -- to the panel,
11 I've certainly had extensive discussions with these
12 witnesses in past hearings, and recognizing that we're on
13 a Friday, late in a hearing, we'll be focussing on just a
14 few areas for discussion. So, to my colleagues, I expect
15 that certainly my discussion with these witnesses will be
16 done at or before three o'clock.

17

18 CROSS-EXAMINATION BY MR. BYRON WILLIAMS:

19 MR. BYRON WILLIAMS: Mr. Bowman, and --
20 and just for -- Mr. Bowman, if you could turn to page 22
21 of your pre-filed evidence, please.

22 MR. PATRICK BOWMAN: Yes, I have it.

23 MR. BYRON WILLIAMS: And, Mr. Bowman, I'm
24 not pointing you to a specific re -- reference in your
25 evidence yet, but both in your dire -- in your written

1 evidence and in your direct today, you made the point
2 that, in terms of regulatory regimes, Manitoba Hydro, in
3 terms of its regulatory rate regulation that it operates
4 on, is -- is relatively unique.

5 Would that be fair, sir?

6 MR. PATRICK BOWMAN: Yes, these days it
7 is, in particular, yes.

8 MR. BYRON WILLIAMS: And what I took you
9 to mean by that -- and if you're looking for a reference,
10 it's probably on the previous page. But what I took you
11 to mean by that is that for most other regulated
12 utilities like it in Canada, they are regulated based
13 upon either rate-base -- rate-based rate of return or
14 something fairly analogous to that.

15 Would that be fair, sir?

16 MR. PATRICK BOWMAN: Yes.

17 MR. BYRON WILLIAMS: And within that
18 context -- and -- and you make this point quite well in
19 your Exhibit MIPUG-14, that the regulatory discourse for
20 those utilities is primarily focussed on the test year,
21 and really the financial forecast, cost of service, and
22 rate-design issues that you've set out in -- on the left-
23 hand side of MIPUG Exhibit 14.

24 Would you agree with that, sir?

25 MR. PATRICK BOWMAN: Yes, in reviewing

1 rates, those would be the things you would look at. In
2 some cases, those regulators also have jurisdiction over
3 something like a -- a power resource plan, in which case
4 they would have the type of reviews on the right, but
5 they -- they don't feed directly into rate reviews.

6 MR. BYRON WILLIAMS: And the distinction
7 you draw with Manitoba Hydro's regulatory regime, is the
8 importance of both keeping your eye on the -- the test
9 year, as well as the longer-term considerations set out
10 in the Integrated Financial Forecast, correct?

11 MR. PATRICK BOWMAN: Yes.

12 MR. BYRON WILLIAMS: And you make a
13 reference on page 22 of your evidence, in the -- in the
14 top paragraph, to the lines -- the proceedings leading to
15 Board Order 25/92, which had before it in the discussion,
16 the financial impacts of the first in-service -- year in-
17 service of Limestone.

18 Is that right, sir?

19 MR. PATRICK BOWMAN: Yes.

20 MR. BYRON WILLIAMS: And the point, I
21 take it, that you're suggesting to the reader from that
22 reference, is that in that particular reading -- or
23 excuse me, that particular proceeding, both Hydro and the
24 regulator ultimately decided upon a rate that was
25 reflective more of longer term financial considerations

1 than the financial issues related to the specific test
2 year.

3 Is that correct, sir?

4 MR. PATRICK BOWMAN: Yes, ea -- each of
5 Hydro and the Board came up with a rate. Hydro's -- had
6 its rate proposal, the Board came up with its order, and
7 in each case it was a rate that was as you described.

8 MR. BYRON WILLIAMS: And so while not
9 meaning to diminish the -- the critical importance of
10 keeping our eye on the test year, or in this case, the
11 two (2) test years, your advice to the Board, as well as
12 it's -- it's a -- perfectly consistent with prior
13 practice, to keep an eye on the longer term as set out in
14 the appropriate financial forecasts?

15 MR. PATRICK BOWMAN: Yes.

16 MR. BYRON WILLIAMS: Now, Mr. Bowman,
17 just flipping arou -- along with your evidence to pages
18 24 and 25, and under the heading, "Risk is Fundamentally
19 a Ratepayer Issue."

20 Do you have that, sir?

21 MR. PATRICK BOWMAN: Yes.

22 MR. BYRON WILLIAMS: And, Mr. Bowman, you
23 -- you had a pithy phrase today in your direct evidence.
24 I -- in terms of your -- I believe it was in your
25 discussion of severe adverse events. And I think you

1 said something to the effect of, My lender will be okay.

2 Do you recall making a statement to that
3 effect, to some degree, sir?

4 MR. PATRICK BOWMAN: Yes.

5 MR. BYRON WILLIAMS: And what I took you
6 to mean by that, is that when we look at adverse events
7 of -- of a material magnitude, affecting the bottom line
8 of a -- a corporation like Manitoba Hydro, while they may
9 have implications theoretically, or notionally, for the
10 debt guarantor, ultimately, responsibility in terms of
11 costs for those adverse events, or -- or paying for the
12 costs of these adverse events, resides with the domestic
13 ratepayer.

14 Would that be fair, sir?

15 MR. PATRICK BOWMAN: Yes, that's part of
16 it.

17 MR. BYRON WILLIAMS: If you wish to
18 elaborate on that point, if I missed it, sir, go -- go
19 ahead.

20 MR. PATRICK BOWMAN: Well, it's -- it's
21 not to be dismissive of anyone who would say, You should
22 be concerned that you keep bond markets, you know,
23 willing to lend to you and that you -- you are attentive
24 to the fact that they're going to want evidence that
25 they're not going to sustain a loss. That -- that is

1 definitely the job of any utility who is borrowing and
2 any company who's out doing that.

3 I think our -- our -- our broader comment
4 there is, if you're working your way through situations
5 where there's a credible risk of loss to a lender, you're
6 way beyond the thresholds that are -- normally can be
7 applied here where you're trying to have stable rates as
8 your ratepayer. You're talking about -- you know,
9 they're -- there are -- there are comments in some of the
10 Kubursi/Magee footnotes and references to -- they
11 reference the capital adequacy ratios in the -- in -- in
12 banks and the like, which is talking about using a test
13 that's talked -- you know, Tier 1 and Tier 2 capital,
14 which is really saying when everything goes, you know,
15 goes south and you have to liquidate this operation and
16 try to fulfill the people lending to you, can your
17 depositors get their money back and can your bond holders
18 get paid.

19 Nobody's talking about liquidating Hydro
20 as selling off its assets to repay the lenders or
21 anything. We're -- we're trying to get a stable rate
22 regime, and -- and you're going to lose a stable rate
23 regime long before you're going to get into those type of
24 things.

25 So it's not to dismiss them, it's just to

1 say they're -- they're way outside the ambit of -- of
2 the types of -- of concerns and comments and the type of
3 situation we're in today.

4 MR. BYRON WILLIAMS: Okay. And -- well,
5 let me focus you in on the page 25, lines 8 and 9 of your
6 evidence. And the point you make there, I'll suggest to
7 you, is that when we look at some of the significant
8 adverse events the Corporation has faced relating to the
9 drought in the '03/'04 period, the -- the real debate in
10 tha -- in those discussions was about ratepayers picking
11 up the freight (phonetic). There wasn't any prospect in
12 those forecasts of -- or suggesting any recourse to the
13 provincial government debt guarantree -- tee.

14 Is that your point?

15 MR. PATRICK BOWMAN: Not under the
16 '03/'04 drought, no.

17 MR. BYRON WILLIAMS: And you -- you go
18 farther, I'd suggest to you, sir, in footnote 54. And,
19 again, you're pointing out that even in the extreme
20 circumstance that we had in Ontario, where debt was over
21 100 percent, as com -- that even in those circumstances
22 it was ultimately ratepayers that -- that picked up the
23 bill and continue to pick up the bill to this day.

24 Is that fair, sir?

25 MR. PATRICK BOWMAN: Well, that -- that's

1 a quote from the transcript during a 2006 proceeding,
2 that Ms. McCaffrey was going through that subject with --
3 with Mr. Bill Harper, who had some specific and on-point
4 expertise in the Ontario situation, and so it went
5 through the Ontario example exactly as you described.

6 That when things went south in Ontario, if
7 -- if that's the right phraseology, his evidence as -- as
8 set out there is you were at a hundred percent debt, and
9 -- and it didn't lead to, you know, creditors coming
10 knocking on the provincial government's door or -- or the
11 provincial government suffering a loss.

12 MR. BYRON WILLIAMS: Now -- now, Mr.
13 Bowman, in -- in this Hearing you've heard from time to
14 time the phrased used of "inter-generational equity."

15 You've heard that phrase in this Hearing,
16 sir?

17 MR. PATRICK BOWMAN: Yes.

18 MR. BYRON WILLIAMS: And I wonder --
19 we'll come back to this discussion a bit later. But I
20 wonder if -- if we can -- you can assist me in agreeing
21 upon a mutual definition. And I hap -- I'm not quite
22 coming to the -- the definition yet, but my starting
23 premise, which I'll suggest to you is that different
24 consider -- consumers are considered as both different
25 groups of ratepayers within a test year, and also inter-

1 temporally, T-E-M-P-O-R-A-L-L-Y, as ratepayers from
2 different time periods or generations.

3 As a starting pref -- premise, before we
4 get to the definition, you'll agree, in regulatory
5 theory, that's -- that's a common concept?

6 MR. PATRICK BOWMAN: Yes, one (1) rate --
7 rate design principles strive to be fair across different
8 groups on those two (2) axis, as you've noted them.

9 MR. BYRON WILLIAMS: And I wonder if you
10 would accept as a de -- definition for inter-generational
11 equity, that ratepayers in a given period should pay only
12 the costs necessary to provide them with services in that
13 period.

14 Would you accept that, sir?

15 MR. PATRICK BOWMAN: Tha -- that would be
16 a classic textbook definition, yes.

17 MR. BYRON WILLIAMS: And, essentially,
18 would you agree as well that this principle requires that
19 the rates in each period should recover the costs of
20 providing service in that period?

21 Would you agree with that?

22 MR. PATRICK BOWMAN: It's the -- the two
23 (2) phrases you used would be, you know, synonymous. It
24 fits with the definition. I think it needs to be viewed
25 in the context of this type of proceeding by, to some

1 extent, talking about the -- the fact that we're not only
2 on the left-hand side of the page. That -- that type of
3 definition would be applied im -- immensely strictly in
4 the context of a ATCO Electric review for rates in, you
5 know, rural Alberta or something. It -- it's a -- it's
6 stretched a little bit when you start to deal with a ten
7 (10) year IFF horizon.

8 MR. BYRON WILLIAMS: So it's -- it's a
9 more challenging concept to apply in this concept is --
10 in -- in this context is your point?

11 MR. PATRICK BOWMAN: Yes.

12 MR. BYRON WILLIAMS: Now, Mr. McLaren,
13 you've been suspiciously silent all afternoon. Just a
14 couple questions for you. And you don't need to turn
15 there, but both in your written evidence and in your
16 direct evidence, you made a couple of -- you discussed a
17 comparison between IFF-07-1 and the more recent IFF's,
18 being 09-1 and 10-1.

19 Do you recall making those references,
20 sir?

21 MR. ANDREW MCLAREN: Yes.

22 MR. BYRON WILLIAMS: And comparing the
23 two (2) time frames for IFFs, I understand one (1) of
24 your points is that if we look back to IFF-07-1, we were
25 a lot less optimistic about where we would be in terms of

1 debt -- debt/equity than we are today.

2 Would that be fair, sir?

3 MR. ANDREW MCLAREN: Yes, that's fair.

4 That was one (1) of the points that we -- we noted that
5 the debt/equity ratio in the more recent IFFs, especially
6 in the near term, was more favourable -- considerably
7 more favourable than in IFF-07.

8 MR. BYRON WILLIAMS: And the other point
9 you observed looking at the IFFS from those respective
10 time periods if I -- if I have your point correctly, is
11 that while -- while IFF-07-1 was considerably more
12 pessimistic about debt/equity prospects, it was
13 considerably more optimistic -- or, excuse me. Let me --
14 strike that. It was somewhat more optimistic in terms of
15 forecast rate increases.

16 Would that be fair, sir?

17 MR. ANDREW MCLAREN: Yes, that's exactly
18 the contrast that we noted, was that in IFF-07 you had a
19 less favourable forecast for debit-to-equity ratio, but --
20 -- but rate increases -- general consumer rate increases
21 assumed to be 2.9 percent, and certainly under 3 percent;
22 whereas when you switch to the more recent IFFs, you're
23 now faced with forecasts of rate increases that are --
24 are higher than 3 percent, which we thought was a notable
25 change compared to previous IFFS. It was the first time,

1 I think, we'd seen rate increases forecast on a continued
2 basis above 3 percent in any IFF that I had reviewed
3 before.

4 MR. BYRON WILLIAMS: And I -- I wonder if
5 I can take your analysis one (1) step -- step further,
6 when we look at the IFF-09 or -10, I'll suggest to you
7 that not only are those projected rate increases above 3
8 percent, they're also somewhat above the projected rate
9 of inflation in future years.

10 Is that fair, sir?

11 MR. ANDREW MCLAREN: Yes, that's correct.

12 MR. BYRON WILLIAMS: Now I -- I think,
13 Mr. Bowman, I'll -- either of you can answer, but I think
14 Mr. Bowman noted that hitting seventy-five, twenty-five
15 (75/25) was to -- to some degree cause for celebration.

16 Did you make some statement to that effect
17 this morning, sir?

18 MR. PATRICK BOWMAN: It's been a long
19 time coming.

20 MR. BYRON WILLIAMS: And the point you're
21 making, Mr. McLaren, in the comparison between those two
22 (2) IFFs is that while it -- it may be, from your
23 perspective -- or, at least Mr. Bowman's per --
24 perspective, a long time coming, the achievement of that
25 notable target hasn't resulted in less pressures on

1 rates?

2 MR. ANDREW MCLAREN: That's essentially
3 the core message that we tried to set out in -- in
4 discussing the -- the review of the financial forecast,
5 that's correct.

6 MR. BYRON WILLIAMS: Now I'm gonna -- I
7 think most of this still stays with you, Mr. McLaren.
8 Directing your attention to page 48 through 50 of your
9 evidence when you discuss both OM&A costs and normal
10 capital costs, as you describe them.

11 Is that your section of the evidence, sir.

12 MR. ANDREW MCLAREN: Yes, I can speak to
13 that.

14 MR. BYRON WILLIAMS: And I'm -- I'm not
15 going to go through your observations about OM&A costs,
16 except for to ask you to agree with me that in terms of
17 OM&A you've noticed -- noted an ongoing trend of them
18 increasing from earlier forecasts.

19 Would that be fair?

20 MR. ANDREW MCLAREN: Yes, I think that's
21 a fair summary and there's a chart in the attachment to
22 the evidence that sort of reviews that in more detail.

23 MR. BYRON WILLIAMS: Yes, and I've --
24 I've reviewed that and you've gone through it as well.

25 And certainly in your MIPUG Exhibit 14,

1 the big, lovely coloured whatever it is, you -- you make
2 a point that there's a requirement for added controls.

3 Do you recall that?

4 MR. ANDREW MCLAREN: Yes, I think one (1)
5 of the core recommendations we had was that in --
6 particularly in the context of this decade of investment,
7 continued focus on cost control and monitoring of those
8 is something we consider quite important now and -- and
9 in the foreseeable future.

10 MR. BYRON WILLIAMS: Well -- and -- and
11 we'll come to -- you -- you made a similar comment in
12 terms of normal capital spending as well, noting both
13 increasing costs as -- as compared to earlier forecasts,
14 and the need for added controls.

15 Fair enough?

16 MR. ANDREW MCLAREN: Yes, I think that's
17 a fair summary.

18 MR. BYRON WILLIAMS: Now, to whom was
19 your advice about added controls directed, sir; Manitoba
20 Hydro, Public Utilities Board?

21 MR. ANDREW MCLAREN: I'll -- I'll let Mr.
22 Bowman walk -- waltz into this one, if he wants, but I --
23 I think it was intended broadly both for the Board and
24 for Manitoba Hydro.

25 MR. BYRON WILLIAMS: And on page 48,

1 which is where Mr. Bowman may start waltzing in, lines 4
2 -- line 14 and 15, the dancing pair of McLaren and Bowman
3 make the point -- or they make -- they suggest the -- the
4 Board has limited tools to exercise at this time in order
5 to enforce vigilance by Hydro in practice over the level
6 of its costs.

7 And what did you mean by that, sir or
8 sirs?

9 MR. ANDREW MCLAREN: Essentially, this is
10 one (1) of the core issues I think we've talked about in
11 these proceedings for the last several that I've been in
12 -- involved in, which is, in some ways, a function of the
13 regulatory framework in Manitoba, which is that, because
14 you don't approve a specific revenue requirement and a
15 specific return on equity the same way many other
16 jurisdictions in Mani -- in Canada do, you don't have the
17 same tools that those regulators have to ensure that a
18 fixed-revenue requirement is set.

19 And so, when you approve an overall level
20 of rates, your -- you may look at it and approve those --
21 that set of rates hoping that the -- that some extra rate
22 increase finds its way into something like a -- like a
23 reserve or an improved debt-to-equity ratio, but you
24 don't have particular tools or -- or switches necessarily
25 in place to ensure that it winds up there at the end of

1 the day, and that things like increased O&M spending and
2 increased normal capital spending can erode the ability
3 to make sure those funds end up where the Board intended
4 them to when awarding the rate increases.

5 MR. BYRON WILLIAMS: Let me follow up on
6 that point. Mr. Mc -- Mr. Bowman, I'm not trying to cut
7 you off, so please -- and, Mr. McLaren, just on how you
8 described that -- actually, Mr. -- Mr. Bowman, if you
9 want to continue, go ahead, and then I'll -- I'll pop
10 back in.

11 MR. PATRICK BOWMAN: Well, I was only
12 going to add that Mr. McLaren's comments are consistent
13 with other evidence we've given before this Board, and
14 they're pretty well set out at the bottom of page 48, in
15 footnote 98, which summarizes the -- the MIPUG closing
16 submission from the 2008 GRA, which, in some ways,
17 expresses a bit of the catch-22 that -- that can face
18 this Board.

19 MR. BYRON WILLIAMS: That's the regulator
20 dilemma discussion, sir --

21 MR. PATRICK BOWMAN: Yeah, it --

22 MR. BYRON WILLIAMS: -- to which no
23 copyright is attached?

24 MR. PATRICK BOWMAN: It was a clever
25 phrase that wasn't ours. But -- and it continues to

1 exist, and it's -- it's the prime motivating factor for
2 us to say one might want to deal with the form of
3 reserves question, because that is the -- if there's an
4 ultimate solution to the -- this Board being able to say,
5 I want to grant a rate increase, and I want that rate
6 increase prioritized to certain things, like risk
7 protection and paying down debt, the form of reserves and
8 the form by which that rate is imposed can be a -- a key
9 part of that solution.

10 But I don't -- I guess I'd only also
11 underline that we wrote this evidence in December, and we
12 spent time analyzing the -- the operating and maintenance
13 costs as best as one can, and -- and thought that it
14 seemed important for both Hydro and this Board to -- to
15 receive the view that we thought continued controls were
16 necessary. I don't think that means that continued
17 controls are easy. I think -- ask Mr. Brennan, who's on
18 a third memo, but, you know, commendation to him for
19 going through the three (3) memos and -- and I -- you
20 know, in that regard, vigilance is -- is not something
21 that's going to go away because you come up with a
22 regulatory tool, I guess, on one (1) side of it.

23 MR. BYRON WILLIAMS: Now, you've offered
24 your advice in terms of one (1) regulatory tool, and I
25 guess another tool, notwithstanding the regulator's

1 dilemma that's always open to the regulator if it's not
2 satisfied that the Corporation has discharged its onus of
3 -- of establishing that its forecast OM&A costs are
4 reasonable and prudent is to lower the approved revenue
5 requirement.

6 Would you agree with that, sir?

7 MR. PATRICK BOWMAN: That's definitely
8 true, and it's probably more true today than it's ever
9 been before. I think if you're sitting here as a Board
10 who is busy saying, I -- I want to see greater reserves,
11 then failing to approve a rate increase, or failing to
12 give a rate increase is -- is going to be a very
13 difficult decision, even if it's meant as a -- a part of
14 getting the utility to focus on -- on O&M when the
15 reserve levels are -- are lower and the outcome of that
16 might be that ratepayers get it in the neck the next time
17 something goes -- goes awry.

18 Today we're at a different level in that,
19 and -- and there may be some -- some further degree of
20 flexibility, you know, as -- as we move forward.

21 MR. BYRON WILLIAMS: As I understand your
22 point, Mr. Bowman, just make sure I do have it, while --
23 and if I'm misstating you, you'll correct me. You're
24 saying that while the reg -- regulator's dilemma has
25 always existed in this regulatory context, in a situation

1 where debt equity ratios are materially different than
2 what they were in IFF-07, for example, that tool to -- to
3 send a signal through the revenue requirement, there may
4 be a bit more flexibility on that today?

5 MR. PATRICK BOWMAN: Yes, there's a
6 revenue requirement in the overall level of rates
7 awarded.

8 MR. BYRON WILLIAMS: And -- and Mr. --
9 Mr. Bowman, I'm not trying to -- well, maybe I am trying
10 to put words in your mouth. We'll see how far I get with
11 it. You -- you heard -- were you here for Mr. Chernick's
12 evidence for yesterday? You were here for a fair bit of
13 it, sir?

14 MR. PATRICK BOWMAN: Yes.

15 MR. BYRON WILLIAMS: And were you here
16 for his discussion in terms of the message sent to the
17 Massachusetts firm in terms of the -- the regulators on
18 happiness with its treatments on demand side management?

19 MR. PATRICK BOWMAN: I -- I -- I heard
20 the -- the evidence he gave. I'm not sure I fully
21 understood it, but I did hear it. Yes, I was here for
22 that.

23 MR. BYRON WILLIAMS: I guess what I'm --
24 I'm getting at in an oblique way is do you have any --
25 well, I'm looking for your views on -- on -- on the

1 concept of sending even a symbolic message, even if it's
2 not a material message through the revenue requirement.

3 If your advice to a regulator in terms of
4 whether or not if there is a level of discomfort with
5 ongoing cost escalation, even sending a small message
6 through the revenue requirement, what are your thoughts
7 on that?

8 (BRIEF PAUSE)

9
10 MR. PATRICK BOWMAN: Well, Mr. Williams,
11 I think it's entirely consistent with our evidence and --
12 and it's among the items that we would say needs to be
13 balanced in coming up with the final overall level of
14 rates awarded. And it's part of the reason we would say,
15 given where we sit today, crystalizing the 2 percent rate
16 increase rather than the 2.9 percent requested, may be
17 one (1) part of -- of achieving that objection.

18 MR. BYRON WILLIAMS: Too, probably, Mr.
19 Bowman, if you could turn to the four (4) criteria in
20 terms of the consideration of risk issues which you set
21 out at page 17 of your evidence.

22
23 (BRIEF PAUSE)

24
25 MR. BYRON WILLIAMS: It's page 17 and, in

1 particular, I'm directing your attention to number 3 on
2 the right, on -- about a third of the way down the page,
3 line 6.

4

5 (BRIEF PAUSE)

6

7 MR. PATRICK BOWMAN: Yes, I have that.

8

9 (BRIEF PAUSE)

10

11 MR. BYRON WILLIAMS: And essentially the
12 quest -- what I understand here is -- is basically is --
13 is suggestions to the Board in terms of looking at risk.
14 A -- a key issue you suggested it may wish to address its
15 mind to is do Hydro -- or does Hydro's decision making
16 criteria -- do Hydro's decision making criteria reflect a
17 risk reward tolerance criteria that is acceptable to
18 Hydro's ratepayers and the Board.

19 That's essentially the question you're
20 posing, sir?

21 MR. PATRICK BOWMAN: It was a question
22 that -- that in the pre-hearing conference MIPUG
23 suggested may help scope this hearing and it was repeated
24 back in Order 30/10 and at the outset of this hearing.
25 But it's a good question, yes.

1 MR. BYRON WILLIAMS: And I want to refine
2 that question or test it a little bit. Would you accept
3 that one could have acceptable decision-making criteria
4 reflecting an appropriate risk reward tolerance and still
5 make a decision that is not consistent with an
6 appropriate level of risk tolerance?

7

8 (BRIEF PAUSE)

9

10 MR. PATRICK BOWMAN: I'm not positive I
11 understand. Do you have -- could you give an example or
12 some -- something that might help --

13 MR. BYRON WILLIAMS: I'll come to an
14 example in a minute, sir.

15 MR. PATRICK BOWMAN: Okay.

16 MR. BYRON WILLIAMS: I'll -- I'll try and
17 ask it better though. And with no disrespect at all to
18 these four (4) very useful questions but I'll suggest to
19 you that when a regulator's looking at a revenue
20 requirement, and especially one (1) in the context of a
21 multi-billion dollar decade of investment, that in -- in
22 looking at risk it's not just the decision-making
23 criteria that one has to keep in mind. It's -- it's the
24 -- the question of is -- is inching towards this decade
25 of investment or leaping or whatever the -- digging

1 towards it, whatever they're doing towards it, I'll
2 suggest to you that that's really central to this -- this
3 regulatory process.

4 Are they accepting -- are they on the --
5 at the point of assuming an intolerable level of risk?

6 MR. PATRICK BOWMAN: Well, as I -- I
7 think it's -- wi -- without getting into the sort of
8 specific examples, if you have one, at each instance,
9 using your -- your scenario of talking about like a
10 decade of investment, I highlighted this in our direct,
11 that at each instance you need to make a decision about
12 continuing to keep an option or a project open it gets
13 more expensive. You expose yourself further. You've put
14 more dollars into it. And if you're not careful you
15 start to preclude other options or other off-ramps from
16 the route that you're on.

17 So this -- your -- your willingness to
18 show the risk or your -- your risk-reward tolerance needs
19 to be considered in -- in each of those decisions. How -
20 - how comfortable am I, first, spending, you know, five
21 hundred thousand dollars (\$500,000) on a -- on a -- to --
22 to explore a wild idea and when -- six (6) months later,
23 when I'm back, how comfortable am I spending \$3 million
24 to refine it. And the next step, how comfortable am I
25 spending 15 million to, you know, bring on some people

1 get some in -- and how comfortable am I, you know,
2 getting out the door and talking to people about it and
3 doing each of those things, and your -- your thresholds
4 will change.

5 And -- and at each step you have to judge
6 it against the fact that you're -- you're ultimately, you
7 know, spending essentially ratepayer's dollars. That's
8 the -- that's the test that -- that people I deal with in
9 Northwest Territories or in -- in Yukon or any number of
10 other jurisdictions have to do.

11 MR. BYRON WILLIAMS: Let me just continue
12 to refine that question, Mr. Bowman. And we'll chat
13 about this for the next three (3) or four (4) minutes
14 probably. You're aware, and you said it in your direct
15 evidence today, that a central premise underlying Hydro's
16 support for this specific general rate application for
17 these two (2) test years was the context of a decade of
18 investment followed by a decade of returns.

19 You're aware of that?

20 MR. PATRICK BOWMAN: Yes, we're aware of
21 it in the context of a recommended plan or an alternative
22 power resource plan. There's -- the -- the investments
23 are very large.

24 MR. BYRON WILLIAMS: And so to -- to try
25 and pose my question in a different and perhaps better

1 way, recognizing that this is not a need for an
2 alternative discussion, but recognizing how Manitoba
3 Hydro has underpinned its rate application with the con -
4 - the concept of decade of re -- investment, decade of
5 return, the question I would pose to you, for your advice
6 to the regulator, is what happens if the regulator is not
7 satisfied that the benefits associated with the decade of
8 return, as set out in -- in Hydro's case theory, are
9 outweigh -- let me try that again. If the -- if the
10 regulator is not satisfied that the benefits associated
11 with the decade of returns outweigh the risks associated
12 with the decade of investment?

13 Let's say it has come to that
14 determination in the context of a central aspect of
15 Hydro's case theory. Where does a regulator take that in
16 the context of a rate setting process? My clients would
17 appreciate this advice as well, by the way, Mr. Bowman.

18 MR. PATRICK BOWMAN: Well, I'll make a --
19 a few preliminary comments to make sure that I'm
20 addressing the question as you -- as you framed it. And
21 -- and hope that I'm going to be able to walk my way
22 through it but if -- if not, I'm sure you'll let me know.

23 Your question is about, at its core, a
24 certain nervousness about this -- this theory or this
25 premise that Hydro's set out that we're embarking on

1 this, you know, ten (10) years of -- of what may prove to
2 be brilliant and may prove to be folly and -- and maybe
3 we won't know till -- till, you know, quite a few years
4 out or the second page of the IFF and that's -- and --
5 and yet we're assessing that in the context where we're
6 not in an NFAAT, we're not making that decision, we're
7 making a decision about rates.

8 I guess the first level of test that --
9 that we would suggest and that is somewhat before us,
10 perhaps not in the most robust manner that you would like
11 to see if you were actually doing the -- the test of the
12 plan, is: Do I have a credible baseline under which I'm
13 assessing variations?

14 There is no status quo option for the next
15 twenty (20) years in any -- according to any of the
16 evidence that's before us. Manitoba's loads are growing.
17 Some of the -- the supplies, like Brandon Coal, are going
18 to be retired and prices for -- for -- that -- that even
19 some of the default dependable options, like gas, are
20 probably going to be a major variable in the overall mix.
21 So there's no status quo. I've -- I don't start with a
22 future plan.

23 And in Hydro's filings it's called the
24 alternative plan. And, interestingly enough, although
25 it's a very core element of how you would start to assess

1 anything, probably less emphasis had been placed on that
2 plan than on the recommended one and -- and for obvious
3 reasons.

4 But a key first step would be kicking the
5 tires of that plan and making sure that it's really the
6 right baseline. Is it really the lowest cost option? Is
7 it really the one that's bringing on the resources in the
8 -- the latest manner and the lowest cost way to supply my
9 loads over a longer term?

10 And the evidence from Hydro, or the
11 assertion from Hydro as I understand it would be, Yes,
12 that is the best baseline. But I haven't seen a third
13 plan filed, okay. And one could easily conceive of one
14 (1). The -- as a thermal future, say. Build a bunch of
15 combined-cycle turbines down south and skip the
16 additional transmission and forgo -- you know, move --
17 move in a different direction. If you were doing this
18 type of thing in -- in some jurisdictions you'd be
19 expected to -- to file that scenario.

20 In some places, depending on the politics
21 of the place, you might be file -- expected to file a
22 scenario that says what if Hydro doesn't build anything.
23 What if I do this by buying and open the market to IPP's.
24 I think that was BC's policy direction from the
25 government, no more big projects out of the utility

1 except for Site C, we're gonna get it all from IPP's
2 building small hydro sites.

3 Now whether that was wise or not, it's --
4 it's unfolding, you know, the way it's unfolding. And
5 you could -- you know, test a few of those. But your
6 evidence that's here and in this rate hearing we're
7 dealing with, doesn't have to solve all of that.

8 It has to deal with rates for the next two
9 (2) years -- or it's two (2) years we've been in this
10 hearing, honestly. And that is a benefit to us the same
11 way that somebody says you don't have to bank on HERMES'
12 results for the next eighteen (18) months, you're gonna
13 run it again next Monday. We get to reset, we get to re-
14 check, we get to keep moving.

15 So starting with the premise that the
16 alternative plan is the baseline development, is the --
17 the best and lowest cost option, and -- and I'm sure
18 people would be happy to answer interrogatories the next
19 time we test on it that -- that it really is that. You
20 need to assess against that future, that trajectory, what
21 -- what's the alternative, what -- whether we should
22 recommend that or whether we should do something
23 different. And you -- you end up with a different set of
24 paths.

25 But your question is about rates: What do

1 I do about rates? The evidence from Hydro is that,
2 although that is the base case, the alternative, the
3 better plan they've come up with is called recommended.
4 It's, you know, Version number 2. And I can't tell you
5 that it's the right plan. The evidence isn't here to
6 tell you it's the right plan. As I said, in our opinion,
7 the evidence is here to say you should keep protecting
8 that option because it could be a very intriguing future
9 for Manitoba.

10 But let's assume I've got the -- the
11 benchmarks now. I've got the two (2) dominant scenarios
12 that might unfold in the future. In the context of
13 rates, how do they affect differently the decision I need
14 to make today? And when we pull that out and we pull out
15 the IFF from the alternative and the recommended, to the
16 degree that those plans are detailed, to the degree that
17 anybody has certainty on all those factors, and within
18 all the variability, the two (2) IFFs do not materially
19 vary the extent to which rate increases would be advised
20 today. And they'd be advised today not far off the
21 levels Hydro suggested: two point nine (2.9) and -- and
22 two (2) would be -- would be perfectly reasonable rate
23 proposals at this time or rate approvals at this time
24 under either of those two (2) scenarios.

25 Now, if someone else walks in with a third

1 way that says, I've got a fusion scenario that would
2 drive you to whatever billions in net income around the
3 corner, that might change things but I'm not sure -- sure
4 it's -- it's -- that's hidden in the weeds out there
5 somewhere.

6 MR. BYRON WILLIAMS: So, Mr. Bowman,
7 thank you for that thoughtful answer. We're going to
8 work with it just a -- a little bit. And let's work off
9 your premise that there's no status quo and your second
10 premise that the results, both from the preferred plan
11 and the alternative, are similar.

12 That was -- that was the point you were
13 making near the end, right, sir? That was your second
14 point in -- in terms of their impact on rate?

15 MR. PATRICK BOWMAN: Yeah. When you look
16 at the plans and where they vary in terms of their
17 spending or in terms of the dates at which they impact
18 things or the dates at which they bring the major
19 resources on over the next two (2) decades, they're --
20 they're imperceptible differences in -- in the IFF in the
21 context of making a decision for the next two (2) years.

22 MR. BYRON WILLIAMS: Okay. And then let
23 me follow that through. So maybe it's my high stress
24 level and all the coffee I'm drinking but I'm the
25 regulator and I'm still nervous. Do I have your point

1 correctly, sir, that even in that context you're not
2 uncomfortable -- let me put it in a positive way. In
3 that context, you're still pretty comfortable with a rate
4 increase in the -- the range of the 2.9 percent to one
5 (1) year and a 2 percent the next year?

6 MR. PATRICK BOWMAN: It's not -- I -- I --
7 - maybe I'll start with the pream -- it's not just the
8 regulators nervous here. I -- I can't imagine there are
9 many people walking around thinking about borrowing \$15
10 billion in debt, whether they work for InterGroup or
11 Hydro or the Board or any number of other entities who
12 don't say, Wow, this could keep me up at night and how
13 the hell do I make this work, or -- or...

14 It's a good reason for nervousness. It is
15 a big, bold plan. But the alternative isn't that much
16 less big and bold on the dollars spent.

17 That's the -- the scenario we're up
18 against, and -- and it's not unlike the situation that I
19 -- that I was dealing with in Yukon. New tiers of
20 generation in this day and age to supply loads that are
21 largely served by much generation developed many years
22 ago at very low cost, cost more than we're used to. And
23 rates got to be adjusted to deal with them. And the
24 blessing of Hydro is you have lots of time to work your
25 way through that because the units last a long time and

1 they have long lives and they're -- and they're capital
2 intensive. So you take your biggest hit up front and
3 then you have time to let the economics start to work for
4 you.

5 Within all of that, I think the one (1)
6 thing we can sit here and be reasonably comfortable about
7 is we're not going to take away our nervousness by
8 changing from a 2.9 to a 3.9 percent rate increase. It's
9 going to do almost nothing to solve, address, improve
10 upon the degree of nervousness or the sleepless nights
11 that have got to accompany \$15 billion in borrowing.

12 MR. BYRON WILLIAMS: Well, let me -- let
13 me -- that's where my next and final question in this
14 area is, sir. Let's assume I'm a regulator, I'm not
15 comfortable with Hydro's risk tolerance. And so to
16 protect Hydro from itself, and its ratepayers presumably,
17 I -- I say let's give them 5 percent.

18 What, if any, comments do you have in
19 terms of whether or not that would reward excessive risk
20 tolerance? Let's take it out of the specifics of this
21 case, sir, where I'm -- I'm not comfortable with a -- a
22 utility's actions, I think they're taking on too much
23 risk. And so as a caution against it I go for a higher
24 rate increase than proposed.

25 MR. PATRICK BOWMAN: Well, I find it

1 easier to comment on it in the context of this case --

2 MR. BYRON WILLIAMS: That's fine.

3 MR. PATRICK BOWMAN: -- in note of this
4 case and I think we have a limited number of tools to
5 manage a large number of issues and one (1) of those
6 issues is finding the way in the short term to support
7 Mr. Brennan in his efforts to impose cost control and to
8 get people to pay attention to that.

9 One (1) of those issues is to look at
10 these reserves that we have in place and weigh how well
11 they're doing in terms of the -- the types of targets we
12 set out for ourselves. One (1) of the issues is dealing
13 with the overall economic climate or pressures that firms
14 are facing or -- or families are facing. All of those
15 things are part of this. And then you overlay this extra
16 piece.

17 But if you -- I hate to say it in this
18 manner, but I've -- I've worked inside utilities, I've --
19 I've dealt with regulators, I've dealt with intervenors.
20 If -- if you think the difference in a number -- or your
21 suggestion is a difference in a number between two point
22 nine (2.9) and five (5) and two point o (2.0) is -- is
23 going to make a big difference in the extent to which
24 people are -- are -- are weighing or considering or
25 needing to -- to balance 10 -- 10 and \$15 billion

1 borrowings and multi-billion dollar projects in one (1)
2 hearing, the -- the numbers aren't sending that signal or
3 discouraging those activities or -- or -- or are going to
4 make a difference in the overall end result.

5 Other -- other aspects of the -- of a --
6 of the Boards comments can, just like Mr. Brennan's
7 efforts after a series of memos may -- may be intended to
8 sort of build a -- build a response, this Board can make
9 comments that over time build a response. And if it
10 suggests caution, I think that is probably important and
11 will be listened to but the thought that -- the -- the
12 numerical decision on rates is somehow firmer or -- or
13 grab someone in a way that -- you know, isn't done
14 through comments.

15 Because it certainly doesn't show up in
16 the numbers. The \$10 million difference in rates doesn't
17 make any difference on \$10 billion in borrowing. It -- I
18 -- I -- I don't think that dragging the numbers signal
19 into it is materially increasing your ability to deliver
20 that message.

21 MR. BYRON WILLIAMS: Moving back, we had
22 had a prior discussion on intergenerational equity. And
23 probably to you, Mr. Bowman, you're aware in this hearing
24 that there's been some suggestion that in terms of our
25 new projects, "our" being Manitoba Hydro, its new

1 projects, it's incurring something in the range of 20 --
2 \$25 million a month in relation to projects that are not
3 yet in service and which are being -- those costs are
4 being capitalized for a future time period.

5 Are you are aware of evidence to that --
6 to that general level, sir?

7 MR. PATRICK BOWMAN: Yes.

8 MR. BYRON WILLIAMS: I think some have
9 said that we're -- we're -- Mani -- Hydro is spending
10 close -- close to a million dollars a day on -- and
11 you've heard statements like this in the record, sir?

12 MR. PATRICK BOWMAN: Yes.

13 MR. BYRON WILLIAMS: And you're aware --
14 let me -- let me try this a different way. It could be
15 argued Me. Bowman, that by spending that amount of money
16 and capitalizing it, we're deferring our problems and our
17 risks to a future generation. And without asking you to
18 elaborate, I'll just -- you're -- you're aware that type
19 of argument could be made?

20 How would you respond to it, sir, from a -
21 - and let me try it again. From a perspective of
22 intergenerational equity, how would you respond to the
23 argument that by expending, you know, \$25 million a month
24 and capitalizing those expenditures, we're -- we're
25 violating the principles of intergenerational equity

1 because we're deferring to those costs to a future
2 generation?

3 MR. PATRICK BOWMAN: I can respond from a
4 couple of -- of different perspectives. I don't think
5 you're violating the principle of intergenerational
6 equity by deferring planning costs. As a matter of fact,
7 I think it's the basic premise and standard on any
8 project that I've worked on or that I'm aware of for how
9 you deal with power -- planning power projects and --
10 and, if anything, it would probably be a concern on the
11 other side were it not being capitalized and -- and
12 attempted to be rolled into projects that are still
13 thought to be -- have a reasonable likelihood of
14 proceeding, to defer and capitalize those amounts.

15 Otherwise, it'd be back to the situation
16 where I'm talking about of, you know, today's ratepayers
17 paying for assets or paying for costs that aren't used
18 and -- and useful to serve them in terms of the costs
19 that they're being allocated, without getting into rate
20 levels, whether they'd be higher or whether they'd be any
21 different.

22 So from the per -- perspective of gen --
23 intergenerational equity, I have -- I have no major -- no
24 major concern with the ongoing deferral and
25 capitalization of that. It -- it would be standard

1 practice.

2 But from the perspective of
3 intergenerational equity or -- or any form of ratepayer
4 equity, the thought that you keep spending material sums
5 to build towards a project that isn't certain to occur is
6 -- is unfortunate but absolutely necessary if you're
7 going to make a project work.

8 On the project that I worked on in Yukon,
9 by the time that we got to deal with the utility
10 regulator, where, similarly, there's certain comments
11 that it was both too early and too late, we didn't know
12 everything but we had already committed to too much or --
13 any other type of criticisms that are -- can be made
14 around -- from intervenors or other parties on that.

15 In that case, we had a construction
16 contract. We had federal government funding. We had
17 environmental licences proceeding well. And we were into
18 the project, my estimate will be, probably, \$7 million or
19 so, I -- I could double-check the number if it's helpful
20 to you, in a jurisdiction where the entire annual revenue
21 requirement for that utility is thirty (30).

22 It's a big, big number. Thirty thousand
23 (30,000) people and \$7 million of their -- of their money
24 had been spent working on this project that doesn't have
25 all the approvals. It costs money to plan stuff and you

1 have to find a way to be able to allow that occur -- to
2 occur in a very tightly-managed fashion, tightly linked
3 to ongoing oversight, and likelihood of proceeding, and
4 assessment of risks and -- and benchmarks and goals of
5 what you're going to achieve, and testing yourself
6 against those goals and -- and progress.

7 And if it's not occurring then you have to
8 find a way to get out. And -- and that is a very painful
9 decision, so you don't keep racking up that account
10 lightly, because a decision to get out can be very
11 expensive. And that's where the equity issue comes in.
12 How will we all like paying for -- for the whatever, the
13 project that didn't go forward, after hundreds of
14 millions of dollars are spent. And that -- if there --
15 if there's an equity or fairness or a ratepayer risk
16 tolerance question, finding a way to -- to survive that
17 delicate dance is -- is where the -- the real nub of it
18 is.

19 MR. BYRON WILLIAMS: Have you been doing
20 a lot of dancing lately, Mr. Bowman? I'll reflect on
21 that answer. I'm going to move to a different area. And
22 then hopefully we'll get us to about three o'clock. I
23 wonder if you can turn to page 38 of your evidence and
24 also the yellow book of -- employed by CAC/MSOS in their
25 cross-examination of Professors Kubursi and Magee, Mr.

1 Bowman? And if you wanted to keep a page on -- a finger
2 on page 1 and, if you want, page 31. That may help you
3 in your answer or it may not, but if you...

4

5 (BRIEF PAUSE)

6

7 MR. BYRON WILLIAMS: I'm just -- oh, I
8 apologize, Mr. Vice-Chair. In the yellow book it was
9 page 1 and 31. And it was page 38 in the written
10 evidence of Mr. Bowman and Mr. McLaren. Mr. Bowman --
11 just one (1) second.

12 Mr. Bowman, just directing your attention,
13 first of all, to the bottom of page 38. In the indented
14 quote there you cite the advice of professors Kubursi and
15 Magee in terms of a -- a target of -- of equity related
16 to adverse events. And I'll suggest to you that -- that
17 their advice is a high percentage of the full cost of a
18 seven (7) year drought with high import prices, high
19 interest rates, and an appreciated Canadian dollar.

20 You're aware that that's the general
21 thrust of that recommendation, sir?

22 MR. PATRICK BOWMAN: Yes.

23 MR. BYRON WILLIAMS: And you can answer
24 with reference to Figure 6.1 and 6.2 of their evidence or
25 not but I'd like your comment on the reasonableness of

1 that target from your perspective, taking into account
2 both the severity and probability of risk.

3 MR. PATRICK BOWMAN: Okay. If I can deal
4 with them in the reverse order.

5 MR. BYRON WILLIAMS: Absolutely. And
6 could you just hold one second, Mr. --

7 MR. PATRICK BOWMAN: Yeah.

8 MR. BYRON WILLIAMS: -- and Mr. Chairman,
9 could I be excused for one second, please.

10 THE CHAIRPERSON: Of course.

11

12 (BRIEF PAUSE)

13

14 CONTINUED BY MR. BYRON WILLIAMS:

15 MR. BYRON WILLIAMS: I -- apologize, Mr.
16 Chairman, something came up, but we've -- we've delayed
17 it.

18 MR. PATRICK BOWMAN: Just to make sure
19 I'm -- I'm gonna follow this right. You're -- the
20 comments you were looking for were on the KM quote, which
21 is the bottom of our page 38, that says a target of
22 equity -- at least a high percentage of the full cost of
23 a seven (7) year severe drought with compounding factors.

24 MR. BYRON WILLIAMS: Absolutely.

25 MR. PATRICK BOWMAN: And the compounding

1 factors I -- I find a -- a little bit curious. If I'm
2 understanding correctly in the -- particularly in the
3 context of the appreciated Canadian dollar, which during
4 a severe drought a -- an appreciated Canadian dollar, if
5 -- if that's meant to be a Canadian dollar that is
6 strong, would actually not be a compounding factor it
7 would be an offsetting factor if anything because you're
8 buying a heck of a lot of -- of things in US dollars
9 during that period.

10 So, I'm -- I'm not sure if it's -- if --
11 if when they put it together there was perhaps a
12 misstatement on that or -- or one (1) has reversed the
13 ratio but --

14 MR. BYRON WILLIAMS: Let me, Mr. Bowman -
15 - and I don't want to interrupt you but let's make sure
16 we have that -- the question was asked awkwardly. So
17 let's -- and -- and you've refined it.

18 So on that simple point, what you're
19 suggesting to the Board is that a high Canadian dollar
20 should enable someone facing having to purchase power
21 from the United States -- it will enhance the purchasing
22 power. And so that those factors will -- will tend to
23 offset costs rather than compound costs.

24 Is that your point, sir?

25 MR. PATRICK BOWMAN: Yeah, to the extent

1 that high Canadian dollar, meaning higher than the rest
2 of the scenario, if you like, arises during the drought.
3 It would seem to me that that's during a period of large,
4 you know, purchases. And so a high Canadian dollar would
5 seem to be a -- a mitigating factor rather than a -- a
6 compounding factor on the cost of a drought.

7 So -- and it's -- it's possible, like I
8 said, there was some cross-exam about what you put in the
9 numerator and what you put in the denominator and that --
10 that it's meant to be reversed. But I -- I would have
11 understood this to be meant as a compounding factor not a
12 mitigating factor.

13 THE CHAIRPERSON: There's two (2)
14 possibilities, presumably: One (1), that Dr. K has said
15 high rather than -- or appreciated rather than an
16 appreciated Canadian dollar. The other possibility,
17 presumably, in such a situation would -- couldn't
18 Manitoba Hydro declare it an adverse water condition to
19 avert having to import the power?

20 MR. PATRICK BOWMAN: Yes, but I don't --
21 on the -- the latter, I don't think that would alone
22 mitigate or -- or offset the -- the beneficial impacts on
23 our appreciated Canadian dollar because in the exposure
24 management context, over the long term it will say
25 inflows and outflows are balanced. And inflows being US

1 dollars received from selling export power and -- and
2 outflows being payments on debt. And one structures the
3 debt to -- to balance those two (2) things.

4 So during a drought, even if you're not
5 buying or you're -- you're managing to avoid having to
6 supply or you reduce your purchases, there's no doubt
7 your -- your export revenues are down, so if any -- so --
8 so your -- your US dollar inflows are also reduced. And
9 all of those factors would seem to go to -- towards
10 you're -- you're better off if the Canadian dollar's
11 strong during that period rather than -- than weak. But
12 I don't -- I don't think a lot turns on it because I
13 think the intent at least is just to say it's a con -- a
14 -- a composite of -- of factors that don't go your way.
15 And -- and I'll -- I'll address the question in that
16 context because beyond that I think we're perhaps being
17 unfair to Kubursi and Magee without putting the -- the
18 comment to them.

19 The comment on probabilities, you've --
20 you've taken me to your yellow book of documents, which
21 is excerpts from the Kubursi and Magee report and, as an
22 introductory comment, I would say we referenced, in
23 respect of Manitoba Hydro's models, that the most
24 reliable way to use a model is to compare a model's
25 results to itself so that certain types of issues or --

1 or estimates or errors or whatever you like in the model
2 will tend to net out then. It's -- you're picking up a
3 change rather than an absolute value.

4 So pages 31 and 1 conveniently compare the
5 -- the Kubursi and Magee scenario to it's -- to -- to
6 their own modelling. And to the extent one can rely on
7 these red graphs they're -- they -- they allow us to do
8 some -- some thought on the probability.

9 So if one accepts Figure 6.1 as the
10 Kubursi and Magee modelling of a thousand (1,000) cases
11 of Hydro's financial results -- and these -- they go
12 right to the sort of bottom line. And in that thousand
13 (1,000) cases you bound the scenario between minus one
14 eighty-six (186) and positive seven fifty-three (753), it
15 gives you an idea of -- of their model and its
16 distributions and the extent to which values can show up
17 in the tails and how far those tails might go.

18 When you go to Figure 6.2, which is the
19 drought scenario, they have used the same model, as I
20 understand it -- this is the evidence that -- that I've
21 heard, and simply fixed one (1) variable, which was --
22 which was water. They haven't yet touched all these
23 other compounding variables. And they've done it on a
24 one (1) year basis, not a seven (7) year and not
25 whatever.

1 And as a result, my Venn diagram I would
2 draw if I had a white board, they're like -- 6.2's
3 results are a subset of the results one could get if you
4 ran 6.1 long enough. And they're a subset of the results
5 because they're -- you fixed one (1) variable and
6 eventually you would spew out all those type of variables
7 out of the -- the 6.1 type of analysis.

8 So -- so 6.2 is a -- is some sampling, if
9 you like, out of the -- out of the -- the Version 6.1.
10 In other words, the drought is a -- is a subset of -- of
11 all possible scenarios. And in that regard, you can look
12 at 6.2 and say, I know that -- that these possibilities,
13 these scenarios exist within the -- the set of possible
14 Monte Carlo outputs, of which I've sampled a thousand in
15 6.1. Okay?

16 The -- the thing you can do, looking at
17 those two (2) graphs, is compare 6.2 and 6.1 and see how
18 likely the stuff you're talking about in 6.2 is now. So
19 in 6 -- Figure 6.2, there is a set of -- of drought
20 years, drought scenarios run, of which the mean is minus
21 three forty-two (342) and the best case here is -- is I
22 believe -- oh, it's the standard deviation, sorry,
23 maximum -- it's minus 44 million. And if I compare that
24 to 6.1, it would emphasize that under the Kubursi/Magee
25 model.

1 The scenarios run in Figure 6.2 are
2 extremely unlikely events, horrendously unlikely events
3 is possibly the -- the right term, given that a thousand
4 (1,000) examples in 6.1 never produced a single value
5 below minus 200 million and yet all of the examples in
6 6.2 are -- are almost all -- 90 percent, 95 percent are
7 outside that range.

8 So the number of times you would have had
9 to run 6.1 and then sample from it to get all of the
10 scenarios in 6.2 would be like -- you'd be drawing zeroes
11 a long time to try to get to that. And -- and just
12 internally comparing those two (2) models, it would
13 suggest that this one (1) year drought, using their
14 analysis, is not a one (1) in a hundred drought, it's not
15 a one (1) in a thousand (1,000). It's -- it's, I don't
16 know, one (1) in a -- you know, very many more zeroes
17 than that.

18 Now they've said compare that to a full
19 cost of a seven (7) year drought with all these other
20 factors, and admittedly those other factors, depending on
21 what you mean by interest prices or high interest rates
22 or the appreciating Canadian dollar, some of those could
23 be you know, fifty (50)/fifty (50) factors. It's --
24 there's a mean and, you know, a high import price. If
25 you're up by a hundredth of a cent maybe you're -- you're

1 in the high versus the low. So some of those may not be
2 quite such a -- they may not be intended as such a
3 horrendously rare type of situation.

4 But in the context of the Kubursi/Magee
5 modelling that you -- you took me to, that was -- that
6 was the main concern that arose when I was looking at
7 Figure 6.2. Now --

8 MR. BYRON WILLIAMS: Mr. Bowman, can I --
9 continue and then I've -- I've got a couple questions for
10 clarification.

11 MR. PATRICK BOWMAN: Well, I was just
12 going to say, having said all of that, I also want to
13 make sure we're fair to the professors, that they not
14 saying a high percentage of a seven (7) year drought
15 which means go to my 6.2. They -- they didn't link the
16 two (2). It was -- you know, it comes out of the same
17 report. But they're not necessarily saying it has to be
18 a seven (7) year drought done that way or anything of the
19 sort. If they're -- if they're really just saying, you
20 know, Hydro and everyone else is talking five (5), I -- I
21 suggest you raise the bar a bit. Then -- then, you know,
22 I do -- I don't want the comparison we just made to be un
23 -- unfair to them.

24 MR. BYRON WILLIAMS: And just a couple of
25 small questions of clarification. First of all, the

1 analytical point you make is that in -- in testing the
2 integrity of a model, it's insightful -- the most insight
3 can be gained to -- by comparing different results of a
4 model against the same model -- results from the same
5 model against themselves.

6 MR. PATRICK BOWMAN: In testing the
7 conclusions of a model or the output of a model, I
8 wouldn't say it's integrity. But in testing the output
9 of a model the best, most reliable use of a model is to
10 test the output of one (1) scenario against another
11 scenario developed using the same model.

12 MR. BYRON WILLIAMS: Okay. And just a --
13 a small point in terms of Figure 6.2. You suggested that
14 water was fixed, and would it be your understanding now
15 that what was fixed in Figure 6.2 is generation? That
16 Mr. -- Professor Kubursi amended his evidence?

17 If -- if you're not able to do that,
18 that's okay, sir, I don't want --

19 MR. PATRICK BOWMAN: I definitely heard
20 both the mathematics or the out -- input sheet we were
21 provided suggested generation. I think wh -- when he
22 tended to go to water people would correct him to
23 generation and he would -- he -- he would agree with the
24 point. But I can't say that with absolute certainty. I
25 haven't seen how those are used.

1 MR. BYRON WILLIAMS: And in terms of
2 Figure 6.1, to your knowledge, based on the record as
3 it's developed, that is a true Monte Carlo simulation in
4 -- in the sense that all variables are allowed to
5 interact randomly?

6 MR. PATRICK BOWMAN: That is the
7 explanation that I heard.

8 MR. BYRON WILLIAMS: Just one very last
9 question. Perhaps it's an addition to the stream we've
10 been on. In MIPUG Exhibit 14, under three (3) in the --
11 the blue under "Risk," you'll see the -- the fifth hyphen
12 down, a -- a paragraph starting "Five (5) year drought."
13 And you've got a statement towards the end of that
14 paragraph that I don't recall you elaborating upon in
15 your direct evidence. You say:

16 "KM estimates -- [excuse me] estimates
17 inconsistent with KM modelled results."
18 Do you see that statement, sir, first of
19 all?

20 MR. PATRICK BOWMAN: Yes.

21 MR. BYRON WILLIAMS: And what do you mean
22 by that?

23 MR. PATRICK BOWMAN: What I meant is sort
24 of the same principle I was just talking about. In
25 looking at the five (5) year droughts and the different

1 ways that people have developed them, KM's figure -- KM's
2 comparison of a one (1) year to a five (5) year is
3 dramatically different than everyone else's comparison of
4 a one (1) year and a five (5) year. They're all pretty -
5 - pretty closely in accord on the one (1) year, 700 to
6 \$800 million off of the base you bet on.

7 When we jump to five (5) year, others
8 would be in the range of, you know, mid-twos. KM's in
9 the range of mid-three (3). So just at the outset it was
10 a -- it was a question about cross-checking that. And in
11 doing that what we did was we just tried to look at the -
12 - the KM estimate of a -- of a five (5) year drought,
13 which is -- you know, builds on their estimate of a one
14 (1) year drought.

15 And in order to have a five (5) year
16 drought that would give you \$3.3 billion off the mark,
17 out of your five (5) years you'd be averaging six (6) --
18 you know, between six (6) -- between 650 and 700 million
19 off the mark on average across those five (5) years,
20 yeah.

21 When you go to the scenario that KM models
22 in Figure 6.1, run a thousand times, they never get a
23 single result, never mind five (5) results, that would
24 put you six hundred (600) -- or, you know, upwards of 700
25 million off the mark.

1 So what does it take -- if a thousand runs
2 gives you this range, what does it take to have five (5)
3 consecutive runs that average outside of the range of the
4 -- of the thousand? It -- you know, it's curious, to say
5 the least.

6 THE CHAIRPERSON: Mr. Bowman, I -- I hear
7 your assertion. You're aware that the independent
8 experts were made available to all, including the
9 Intervenors. Have you checked this with Dr. Kubursi?
10 Because presumably, Dr. Magee, this is his field. Have
11 you been able to reconcile your view with his? Because I
12 think you have the opportunity to do so.

13 MR. PATRICK BOWMAN: We -- we --

14 THE CHAIRPERSON: It shouldn't be a
15 matter of guesswork. That's what I'm saying.

16 MR. PATRICK BOWMAN: No, no.

17 THE CHAIRPERSON: You come to a different
18 answer than he did. Presumably you could collaborate
19 with each other and you would know whether or not he was
20 correcting his assertion or...

21

22 CONTINUED BY MR. BYRON WILLIAMS:

23 MR. BYRON WILLIAMS: Mr. Chairman, excuse
24 me. I -- I could put the que -- I -- I think what -- and
25 -- and certainly I -- I don't want to interrupt your

1 question.

2 But what I think you were saying, Mr.
3 Bowman, is you're not questioning the number that came
4 out of the five (5) year drought simulation where the
5 data from Figure 6.1 and the probability distributions
6 from Section 6.5 were applied to a five (5) year drought
7 scenario. What you're taking issue with is -- in terms
8 of looking at the output of the model is you're wondering
9 about its analytic in -- in consistency when one looks at
10 that single year, which is supposed to be based upon
11 random variables, and that type -- that magnitude of
12 output is just not -- not appearing in a thousand
13 simulations?

14 If I misdirected the Chairman's question,
15 I -- I apologize.

16 THE CHAIRPERSON: No, the same line.

17 MR. PATRICK BOWMAN: I'll -- I'll try to
18 answer both. The -- you -- you did note, Mr. Chairman,
19 that there was the opportunity to discuss with the
20 professors. We -- we did have a me -- meeting with them
21 early on, certainly well before this material was
22 developed. We made an attempt to meet with them at a
23 later date, which -- but it was in the sort of final
24 throes of them preparing the report. There wasn't a
25 practical opportunity to do that.

1 When they were here testifying we
2 separately did have a discussion with them about the
3 three point three (3.3) sort of off on the side as much
4 as -- as much as one is sort of able to do that in a --
5 once people are -- are being cross-examined and -- and in
6 a, you know, sworn testimony and the like.

7 We're -- we have asked a number of
8 questions both of our counsel who've tried to put it to -
9 - to the professors, as well as through this, to make
10 sure that we're able to understand the model. We don't -
11 - can't -- we can't run it -- we don't -- they haven't
12 sent over software any more than anyone else in the
13 hearing has.

14 But it's not to say that Figure 6.2 is not
15 possible. Figure 6.2 is -- is definitely a set of runs
16 that is within the universe of which Figure 6.1's results
17 are -- are drawn. That's our understanding and -- and
18 talking to them it seems that that's -- that's consistent
19 with the way that they viewed it.

20 And Figure 6.2 and 6.1 were prepared in
21 the evidence, not before the 3.3 was developed, just --
22 and -- and I don't think I heard anything different in
23 their -- their testimony and in the questions that were
24 put to them by Mr. Williams and -- and Mr. Hacault about
25 that -- that that one (1) scenario randomizes everything,

1 and the other scenario fixes only one (1) variable and
2 randomizes everything else.

3 The -- the recipe on that, all I'm
4 commenting on is mathematics and probability. It's not
5 saying these scenarios don't exist in this universe; they
6 do. They just happen to be very, very unlikely in this
7 universe and -- and it's a mathematical relationship
8 between the two (2).

9 The -- in regards to the 3.3 we spent some
10 time with them because that showed up on -- actually --
11 honestly it -- it -- I believe it showed up in their IR
12 responses in and -- and it was our omission. We had --
13 we had missed that when we prepared our evidence. We
14 later saw it when it came up in their direct.

15 And we did spend some time with them on
16 that and -- and learned that in preparing that direct
17 piece they had actually modified this model a bit and ran
18 it, sort of, serially, rather than just simply a
19 randomized basis. And in doing that they -- they came up
20 with the 3.3 million by running a million scenarios with
21 -- with certain bounds on them; they took five (5)
22 consecutive years.

23 And -- and again, there's -- to the extent
24 that one can understand the model, there doesn't seem to
25 be anything that would necessarily suggest bad

1 arithmetic, the question is just the probability. And I
2 -- I would say that I don't think it's a -- it's a huge
3 conclusion that within the one thousand (1,000)
4 scenarios, which -- which they continue to confirm
5 subject to, I believe, one (1) comment about water
6 rentals and a mistranscribed number, that this would be
7 the way that they would model it, that within that
8 thousand scenarios they would say that it's a -- it's
9 pretty far outside the horizon to have your -- your -- a
10 600 million, or a \$650 million variance. But despite
11 that, a 3.3 scenario requires you to have that -- that
12 average variance over five (5) years.

13 So it's -- it's simply commenting on a set
14 of probabilities, and -- and in that regard we did, sort
15 of, talk to them, but no one tried to pull out a
16 calculator and figure out what that probability was. But
17 it -- it's a -- it's sort of a direct conclusion of the
18 fact that you run a thousand scenarios, you're meant to
19 draw the -- the reasonably likely universe. And if you
20 find events outside of that, you have to know that those
21 are -- those are pretty small likelihoods.

22 THE CHAIRPERSON: Mr. Chairman, thank
23 you for this opportunity. I did run it a little later
24 than planned, but I apologise for that. But thank you,
25 witnesses, as well.

1 MR. PATRICK BOWMAN: I didn't answer the
2 second half of your question.

3 MR. BYRON WILLIAMS: Oh, sorry, Mr.
4 Bowman. I thought that was the answer.

5 MR. PATRICK BOWMAN: You -- you had asked
6 about -- of Kubursi and Magee's comments on probabilities
7 and on magnitude. And I -- I didn't actually touch on
8 the magnitude side and I don't know if that's still
9 something you --

10 MR. BYRON WILLIAMS: No, I'm -- I'm fine
11 with the answers as -- as you've presented them, sir.

12 THE CHAIRPERSON: I think I'm the one
13 that managed to extend your time. You were pretty good.
14 Thank you.

15 Okay. We'll take a break now. And when
16 we come back I guess we could start with Manitoba Hydro.
17 Correct, Mr. Peters? Mr. Gange.

18 MR. WILLIAM GANGE: I won't be very long,
19 Mr. Chair. I'll be very, very short, so.

20

21 --- Upon recessing at 3:19 p.m.

22 --- Upon resuming at 3:47 p.m.

23

24 THE CHAIRPERSON: Okay. I apologize.
25 Something came up that we had to deal with. Mr. Gange,

1 you say that --

2 MR. WILLIAM GANGE: Thank you very much.

3 THE CHAIRPERSON: -- it won't take you
4 too much time, will it?

5 MR. WILLIAM GANGE: It -- it will not --

6 THE CHAIRPERSON: Very good, sir.

7 MR. WILLIAM GANGE: -- Mr. Chair.

8

9 CROSS-EXAMINATION BY MR. WILLIAM GANGE:

10 MR. WILLIAM GANGE: Mr. Bowman, one (1)
11 of the points that you gave testimony on was perfect
12 foresight. And you're aware that in the KPMG report and
13 the KM report questions had been raised that -- that
14 perfect foresight would result in an understatement or an
15 underestimate of -- of the effect of the drought.

16 Is that -- would you agree with that?

17 MR. PATRICK BOWMAN: Yes.

18 MR. WILLIAM GANGE: And Mr. Wallach also
19 raised that. And now your testimony, as I heard it in
20 your direct, was that you -- although you recognize the -
21 - the perfect foresight, you don't see it as -- as much
22 of an issue.

23 MR. PATRICK BOWMAN: Yes.

24 MR. WILLIAM GANGE: Mr. Wallach's comment
25 was that it was impossible to know what the effect of it

1 was, and that he recommended that the -- that the company
2 attempt to study that so that the effect of perfect
3 foresight would be better understood.

4 Do you recall Mr. Wallach saying that in
5 his report, sir?

6 MR. PATRICK BOWMAN: Yes.

7 MR. WILLIAM GANGE: Would you disagree
8 with that?

9 MR. PATRICK BOWMAN: No, but the extra
10 layer that I added was that we reviewed evidence that
11 Hydro did that, and the results of that are filed in one
12 (1) of the appendices.

13 MR. WILLIAM GANGE: And -- and do you
14 know which appendices -- which appendix?

15 MR. PATRICK BOWMAN: I -- I can look it
16 up for you. It is -- it's -- it's in the appendix that I
17 was referencing, and I'd have to look it up, but it's the
18 one where the provincial government was tasked with
19 consulting with First Nations about the effects of
20 Wuskwatim, and so they had to get from Hydro the project
21 description of what Wuskwatim would do to the water
22 levels, which is a -- a component to the output of
23 SPLASH.

24 And, as part of that, there's an
25 appendices (sic) filed that the provincial government

1 received that output, they received a report from Hydro
2 that described SPLASH and all of the -- the intricacies
3 of it and the down sides and the reasons why it -- it
4 works and where -- where it may not be perfect for the
5 purposes of -- of modelling water levels in -- in the
6 Hydro system.

7 And then the government hired three (3)
8 preeminent hydrological experts, Slobodan Simnivic, Rick
9 Carson and Jay Doering, and did a review, working for the
10 provincial government, of the output of SPLASH and
11 whether it was reliable, and they -- they concluded it --
12 it was, particularly for the purposes that -- that it was
13 being used for there.

14 But within that report, where Hydro sets
15 it out, they explain the perfect foresight issue, if you
16 like, why Hydro didn't think it was much of an issue, and
17 an extra test that they had done to eliminate perfect
18 foresight and to -- to bound the -- the output in -- in
19 the other direction, which I can go through in a bit more
20 detail if it helps, but -- and -- and concluded that,
21 within that -- that sort of alternative, which is going
22 from perfect foresight going to no foresight, it made
23 very little difference to the output of SPLASH, which,
24 you know, in -- in their submission in that report,
25 didn't surprise them, because they had thought this

1 through before, but -- but, nonetheless, there is --
2 there is a conclusion there.

3 I'm not sure there's a huge amount of --
4 of data, but there's a conclusion there that -- that it
5 has been tested, both perfect foresight and no foresight,
6 and -- and found to make very little difference. And my
7 understanding is they're working on a way to more
8 routinely be able to use that extra cross-check, but --
9 but that it has been done.

10 MR. WILLIAM GANGE: If you could just, by
11 way of undertaking, agree to advise me of that so that I
12 can provide that information to Mr. Wallach for -- for
13 his review.

14 MR. PATRICK BOWMAN: Yeah. That's fine.
15 I can point out that appendix.

16 MR. WILLIAM GANGE: Thank you.

17 The undertaking is that Mr. Bowman will
18 advise me of which appendix the -- he is referencing with
19 respect to the review that relates to the effect of -- of
20 perfect foresight. Thank you.

21

22 --- UNDERTAKING NO. 172: Mr. Bowman to advise which
23 appendix references the
24 review relating to the effect
25 of perfect foresight

1 CONTINUED BY MR. WILLIAM GANGE:

2 MR. WILLIAM GANGE: The second issue, Mr.
3 Bowman, again, Dr. Kubursi had -- had raised -- had made
4 a number of comments about wind not being dispatchable, I
5 think was the comment that he made, and he said that this
6 was something that was consistent with the FERC
7 requirements.

8 Do you -- do you recall that?

9 MR. PATRICK BOWMAN: Yes.

10 MR. WILLIAM GANGE: And you had
11 indicated, in your testimony, that -- that, as far as you
12 were aware, there was no literature that would or -- and
13 -- and no provisions that would hold that wind is not a
14 dependable source over the course of a year.

15 That -- that was your comment, I believe?

16 MR. PATRICK BOWMAN: Yes.

17 MR. WILLIAM GANGE: And -- and in your
18 testimony, you talked about the alternative plan, and --
19 and how your thought is that -- that there ought to be,
20 perhaps, a third plan that would discuss other
21 alternative sources of -- of power.

22 Do I have that right?

23 MR. PATRICK BOWMAN: I think mostly
24 correct. I think what I was saying is, we have a -- a
25 preferred and a recommended that allow us to understand

1 what Hydro's saying about its plan. If somebody was
2 really into a proceeding to test the plan that -- that is
3 sometime enabled, like -- like was done in 1990 with this
4 Board, or -- or like is done in other jurisdictions,
5 there would probably be an expectation that a few other
6 alternative scenarios or -- or portfolios are tested to,
7 you know, show the implications of going a different
8 route than -- than simply the -- the two (2) that are set
9 out.

10 MR. WILLIAM GANGE: And Mr. Wallach had
11 suggested that one (1) of the other possible alternatives
12 that ought to be studied and -- and commented upon would
13 be the development of further wind power.

14 Do you recall that in his testimony, sir?

15 MR. PATRICK BOWMAN: I do.

16 MR. WILLIAM GANGE: And would you agree
17 with me that as -- as one (1) of the possible options
18 that ought to be -- that -- that warrants further study?

19 MR. PATRICK BOWMAN: It -- it would
20 probably be a component of -- of any number of plans.
21 I'm -- I'd call it sceptical, although it would be
22 interesting to see the results, that you have an all-wind
23 future. It would be some -- some combination of -- of
24 different components.

25 MR. WILLIAM GANGE: Yes, and I don't

1 think that Mr. Wallach at any time had suggested that
2 there would be an all-wind future. I think -- I think
3 that he was talking about it being a compliment to the
4 hydro system.

5 MR. ROBERT MAYER: I remember the gas
6 suggestion.

7 MR. WILLIAM GANGE: No, that wasn't his
8 suggestion.

9 MR. ROBERT MAYER: Oh, whose what that?
10 It was one (1) of your witnesses.

11 MR. WILLIAM GANGE: Well, no it was -- it
12 comes in a different fashion, Mr. Vice-Chair, and we'll -
13 - we'll talk about that on the patio, but...

14 MR. PATRICK BOWMAN: I -- I do recall the
15 testimony. I -- I don't believe his testimony was that
16 one has sort of an -- an all-wind that doesn't compliment
17 Hydro, but I'm cautioned on this topic routinely by Mr.
18 McLaren, who's -- who -- who deals with the -- the
19 concept of alternative scenarios and portfolios more --
20 more than I do, and in particular in the BC context, that
21 there's a difference between a portfolio and a scenario,
22 and a -- I'll -- I'll -- maybe I should let him address
23 that.

24 MR. ANDREW MCLAREN: Sure, just to follow
25 up on that if I can. In -- in a BC Hydro type of context

1 in the process we're in right now with they're integrated
2 resource plan process, a portfolio of resource options
3 that they might look at would be a -- as an alternative
4 to something that looks at exclusively large hydro or
5 mostly large hydro. They would have a -- what they would
6 call portfolio that would example -- exam perhaps small
7 scale renewable resources which might include wind, and
8 small scale hydro, and biomass.

9 It won't pick individual projects. It
10 will just say, Given what we know is available out there
11 for potential, we can construct a resource options
12 portfolio that focusses primarily on maximizing the
13 potential of those types of resources. And it will also
14 identify some things if there's a -- if there's a
15 capacity concern, the capacity can't be met, it will say,
16 we could go with this much wind or small scale hydro, but
17 we would have to have some type of firming up or capac --
18 additional capacity resource on the system, which --
19 which could be natural gas or -- or could be some other
20 capacity improvement on a hydro site or something like
21 that.

22 But that's the type of resource option
23 portfolio that they might -- might look at in that
24 context.

25 MR. WILLIAM GANGE: Thank you, Mr.

1 McLaren. Thank you, Mr. Bowman.

2 Mr. Chair, those are my questions.

3 THE CHAIRPERSON: Thank you, Mr. Gange.

4 I want to thank the panel for an interesting day. And so
5 we're going to come back together Monday morning at 9:30,
6 and we've got Ms. Pambrun, and I don't know if you have
7 any questions for this panel or not.

8 MS. DENISE PAMBRUN: There will be no
9 questions from the City, Mr. Chairman?

10 THE CHAIRPERSON: Okay. Then we'll move
11 onto Manitoba Hydro and Board counsel. So have a good
12 weekend, everyone. We'll see you on Monday at 9:30.

13

14 (PANEL RETIRES)

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16 --- Upon adjourning at 3:57 p.m.

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18 Certified Correct,

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Cheryl Lavigne, Ms.

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