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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
- Len Evans - Board Member

HELD AT:

Public Utilities Board  
400, 330 Portage Avenue  
Winnipeg, Manitoba  
February 24, 2011  
Pages 2919 to 3150

1 APPEARANCES  
2 Bob Peters )Board Counsel  
3  
4 Patti Ramage )Manitoba Hydro  
5 Marla Boyd )  
6  
7 Byron Williams )CAC/MSOS  
8 Myfanwy Bowman (np) )  
9  
10 Antoine Hacault )MIPUB  
11  
12 Michael Anderson (np) )MKO  
13  
14 William Gange )RCM/TREE  
15  
16 Delanie Coad (np) )SCO  
17  
18 Denise Pambrum (np) )City of Winnipeg  
19  
20 Gavin Wood )Independent Experts  
21  
22  
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3	68 ICF to respond to the following question:	
4	Mr. Rose, in your paper to the Bonbright	
5	Conference of 2009, you commented on the	
6	financing of utilities. And in the	
7	September 2009 report to Manitoba Hydro,	
8	you suggest it would be reasonable to	
9	review the capital structure of Manitoba	
10	Hydro. First of all, are those references	
11	fair? And the question is: In your view,	
12	would lenders considering financing	
13	utilities' major capital spending plans	
14	that, if completed, would more than double	
15	the utilities assets and borrowings, would	
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1 --- Upon commencing at 9:35 a.m.

2

3 THE CHAIRPERSON: Okay. Good morning,  
4 everyone. Mr. Peters, when -- whenever you're ready to  
5 go. Ms. Ramage, or -- do you have anything else for us?

6 MS. PATTI RAMAGE: I have, in terms of  
7 housekeeping matters. One (1) was -- yesterday afternoon  
8 we distributed Manitoba Hydro's quarterly report for the  
9 nine (9) months ending December 31st, 2010.

10 THE CHAIRPERSON: Yes, we have it.

11 MS. PATTI RAMAGE: There was no formal  
12 undertaking for that, but at transcript, page 451, a  
13 request was made that we file that as soon as it became  
14 available, so it has been circulated, and I think it  
15 should probably be given an exhibit number, which I am  
16 going -- I believe is 57, but let me confirm with my back  
17 row. Oh, no, it will -- it'll end up 59; I've gone out  
18 of order.

19

20 --- EXHIBIT NO. MH-59: Manitoba Hydro's quarterly  
21 report for nine (9) months  
22 ending December 31, 2010

23

24 MS. PATTI RAMAGE: I -- is that right?  
25 Yes, because we already -- we have Undertaking number 43

1 which we're filing this morning, which we've assigned  
2 Exhibit 58. And that's advising whether the AOCI has  
3 been a factor in the debt-equity ratio for the various  
4 fiscal years going back to 2005/'06.

5 So to be clear for the record, that  
6 Undertaking 43 is Exhibit Manitoba Hydro 58, and the  
7 quarterly report will be Exhibit 59.

8

9 --- EXHIBIT NO. MH-58: Response to Undertaking 43  
10

11 THE CHAIRPERSON: Very good. Thank you.

12

13 MOTION TO DISALLOW THE CROSS-EXAMINATION OF ICF WITNESS  
14 BY MR. GAVIN WOOD:

15 SUBMISSIONS BY MS. PATTI RAMAGE:

16 MS. PATTI RAMAGE: And there's one (1)  
17 other matter Manitoba Hydro wanted to deal with first  
18 thing this morning so parties would have an opportunity  
19 to perhaps deal with it, and the Board.

20 And that is that while we've been having  
21 this discussion out -- amongst counsel for some time  
22 regarding the role of the independent consultants in  
23 terms of the cross-examination process, it appears today  
24 this is the first time it's going to actually come to  
25 fruition in that Mr. Woods has confirmed his intention to

1 cross-examine witnesses in this matter on behalf of the  
2 independent consultants.

3                   And therefore Manitoba Hydro wishes to  
4 formally note its objection and -- and request a Board  
5 ruling on that.

6                   At the outset, Manitoba Hydro wishes to  
7 make clear that it understands this is an unusual  
8 situation, and that its objection is not in any way  
9 intended to reflect on Dr. Kubursi or Dr. Magee or their  
10 counsel.

11                   However, Manitoba Hydro's concerned that  
12 the Board may be setting a precedent by allowing a non-  
13 party to cross-examine witnesses in its process. I think  
14 it's trite to say that the right to cross-examine is  
15 normally reserved for parties to a matter, and these  
16 parties are typically adverse in interest, and the  
17 exchanges of information between them are made in  
18 accordance with rules of evidence.

19                   In this case, and pursuant to PUB Order  
20 30/'10 and the independent consultant's terms of  
21 reference, the independent consultants are, in part, as  
22 part of their engagement in, specifically, Term Number 8,  
23 to act as a resource to all of the parties.

24                   From Manitoba Hydro's perspective, it's  
25 now counterintuitive to invite a party to use the

1 independent consultants as a resource, and then  
2 subsequently have the independent consultants effectively  
3 change hats and take on the role of a party adverse in  
4 interest and cross-examine that party on its evidence.  
5 This applies not just to Manitoba Hydro. It applies to,  
6 I think, any party who's -- who's dealt with -- or the  
7 role of the independent consultant impacts on their  
8 evidence.

9 I expect to hear, or I could hear, that  
10 the independent consultants have given the report, they -  
11 - they have skin in the game, and they're entitled to  
12 defend that report. And if I could def -- deal with that  
13 point, in terms of defending their report, Manitoba Hydro  
14 agrees that these expert witnesses are certainly entitled  
15 to defend their reports, and that process is in place.  
16 It's in terms of direct examination where they lead their  
17 evidence and explain their report and cross-examination  
18 where they defend any challenges to that report. But as  
19 I've indicated, the right to cross-examination is  
20 reserved for parties adverse in interest, and the key  
21 word there being "interest."

22 The independent consultants have no  
23 interest in these proceedings, or, more particularly,  
24 their results. They don't represent a group of  
25 Manitobans, and they don't have skin in the game. It's

1 not like the case of industrial customers or residential  
2 customers. They -- they have their reports, and they are  
3 absolutely entitled to -- to explain their reports and  
4 defend them but in the context of -- of the normal  
5 evidentiary proceedings.

6 By way of analogy, because I'm a witness  
7 to an accident doesn't mean I have the right to counsel  
8 to prove my version of events when we're in court  
9 reviewing that accident. I don't have skin in the game  
10 simply because I have a view of what happened.

11 And as I said at the outset, our concern  
12 is with respect to the precedent this will set. We're  
13 concerned with the prospect of witnesses who are not  
14 parties claiming a right to participate in cross-  
15 examination, and we're concerned with the viability of  
16 the independent witness concept on a go-forward basis if  
17 there exists the possibility of the independent witness  
18 subsequently cross-examining the parties who have  
19 potentially opened their doors to that witness and used  
20 that witness as a resource.

21 And those are simply Manitoba -- that's  
22 Manitoba Hydro's comments, and I suspect other  
23 intervenors and Mr. Wood himself may want to speak to  
24 that, but I thought I'd get it out at the outset so they  
25 have an opportunity to digest that comment and perhaps

1 come back later with their own.

2 THE CHAIRPERSON: Okay. We'll survey the  
3 other parties and then we'll take the matter under  
4 reserve and discuss it at our -- our break or perhaps our  
5 lunch. We'll see how it goes.

6 Mr. Williams...?  
7

8 SUBMISSIONS BY MR. BYRON WILLIAMS:

9 MR. BYRON WILLIAMS: Yes. Just in terms  
10 of the submission of Manitoba Hydro, our client's  
11 position in the unique circumstances of the case, they  
12 would support a role for the advisors' counsel, certainly  
13 for the purposes -- but perhaps a more circumscribed role  
14 for the purposes of questions of clarification rather  
15 than in a typical, more adversarial role.

16 And clearly Hydro, the independent  
17 consultants, and certainly we hope to get in -- in on the  
18 game as well, are engaged in the great battlefield of  
19 opinions, and it's important to have clear communication.  
20 And certainly we see the possibility that there might be  
21 the need for questions of clarification from the  
22 independent counsel to flesh out their understanding of  
23 the other side's case in -- in order that they may not  
24 only adequately respond, but enrich the context of the  
25 hearing.

1                   So recognizing a) that the -- the Board  
2 has the power to amend its rules of procedure,  
3 recognizing b) that these are truly unique circumstances,  
4 and certainly my clients don't see it as setting a  
5 precedent, and with the caveat that we think the role of  
6 the independent counsels -- or the counsel to the  
7 independent advisors should be circumscribed to questions  
8 of clarification, we certainly, on behalf of our clients,  
9 would be supportive of a limited participation in cross-  
10 examination.

11                   THE CHAIRPERSON:    Thank you, Mr.  
12 Williams.

13                   Mr. Hacault, from MIPUG?

14

15 SUBMISSIONS BY MR. ANTOINE HACAULT:

16                   MR. ANTOINE HACAULT:    Yes, good morning.  
17 First, given that it's just arisen this morning, we have  
18 no formal instructions from our client, but I would like  
19 to, however, express my views as counsel. I note that in  
20 the terms of reference for Order number 30/'10 the PUB,  
21 although I don't have the Act in front of me, indicated,  
22 and I'm quoting, that:

23                               "PUB has jurisdiction to appoint any  
24                               person to make an inquiry and report  
25                               upon any matter within its

1 jurisdiction."

2 As a result of that particular section in  
3 the PUB Act it then appointed those two (2) doctors to  
4 make inquiry and report.

5 So first I note that it would be rather  
6 unusual that they would go beyond what the legislation  
7 contemplates is the role for these people. They would be  
8 going beyond making an inquiry and reporting to the PUB.

9 Secondly, I do note that the PUB does have  
10 its counsel who quite ably cross-examines on any matters  
11 of issue. The second matter that I find rather unusual  
12 is when you have two (2) people who have been employed --  
13 appointed to make independent inquiry as independent  
14 parties that they now take a cross-examination role,  
15 which is very much adversarial in nature.

16 They had full ability to ask questions  
17 pursuant to the terms of reference at any point in time.  
18 They were specifically given that power, and it could be  
19 exercised prior to the hearing if they had any issues  
20 with the written reports, answers to interrogatories, or  
21 anything that's happened.

22 So I think they have the full ability to  
23 get whatever information they wanted to out of the terms  
24 of reference without getting into an adversarial matter  
25 such as cross-examination. I do note that even in the

1 submissions that were made as -- and noted in part of the  
2 Board reasons on behalf of the independent experts, and I  
3 acknowledge it was more in the context of meetings, but  
4 I'm quoting from the Board order at page 26 of 53:

5 "The independent experts therefore  
6 stress that any meetings to take place  
7 with them are for information exchange  
8 or data exchange purposes only as  
9 opposed to providing opinions on the  
10 information received [and this is the  
11 more critical part] or making arguments  
12 in support of any existing position."

13 So they were truly to be independent and  
14 not take an adversarial role. And I just fi -- find it  
15 rather unusual that a witness all of a sudden would  
16 assume that role. Thank you very much.

17 THE CHAIRPERSON: Thank you, sir. Mr.  
18 Gange...?

19

20 SUBMISSIONS BY MR. WILLIAM GANGE:

21 MR. WILLIAM GANGE: Mr. Chair, on -- on  
22 behalf of the Green Action Centre and Time to Respect  
23 Earth's Ecosystem, I think the positions have been put  
24 forward, and I don't think I have anything really to add  
25 to that.

1 THE CHAIRPERSON: Thank you, sir. Mr.  
2 Wood...?

3  
4 SUBMISSIONS BY MR. GAVIN WOOD:

5 MR. GAVIN WOOD: Tha -- thank you. To  
6 begin with, let me indicate to the panel that my -- my  
7 friend, Ms. Ramage, has alerted me to the fact that  
8 Manitoba Hydro was going to make this -- this motion this  
9 morning, and I've had an opportunity to form my thoughts.

10 It might be helpful for you to know the  
11 process that Drs. Kubursi and Magee have gone through  
12 this week. I've, of course, been here. I've had an  
13 opportunity to speak with them. And beginning late  
14 yesterday, and then through the evening, and now this  
15 morning they've provided me with several question areas.

16 As late as yesterday they were, frankly,  
17 of mixed minds about me cross-examining. I appreciate  
18 some of the concerns that my friend on behalf of the  
19 Corporation has expressed. Some of the people present  
20 here know me, and -- and I think they will trust me in  
21 saying this to you, that I do believe that I can play a  
22 role of a non-adversarial nature in terms of some of the  
23 matters that Mr. Rose has raised in the past two (2)  
24 days.

25 The nature of the questioning that the

1 doctors wish me to put to Mr. Rose, in part is being --  
2 to be fair to Mr. Rose, because there are certain things  
3 that he has said that they need clarification on because  
4 they're -- they want to respond in doing their job with  
5 the panel ultimately.

6                   And in their direct, my intention both  
7 with regards to Mr. Rose's evidence and then presumably  
8 the evidence we hear from KPMG next week is -- is going  
9 to be for them to respond to certain things that he has  
10 said.

11                   In fact, if the panel determines today to  
12 allow me to ask some questions one (1) of the thir --  
13 first things I'm going to say to Mr. Rose is a -- a small  
14 apology because I'm going to say to him there are at  
15 least two (2) areas involving computer modelling and such  
16 where I'm virtually going to be reading the question out,  
17 get -- getting his response, but then not for a moment  
18 looking to go on and -- and -- and into any kind of an  
19 adversarial matter with him but rather that -- so that  
20 the doctors, in their expertise, understand fully what he  
21 has said and be ready to -- to respond to him when they -  
22 - when they ultimately appear. So there is that.

23                   The only other thing that my good friend  
24 Mr. Hacault mentions that I -- I would remind the panel  
25 on is -- and -- and of course no discre -- discredit to

1 Mr. Rose, certain things that he has put in in his direct  
2 are -- are fresh. I mean, he -- he -- his report, of  
3 course, was -- pardon me, ICF's report was, of course,  
4 long before the independent expert's report, and  
5 understandably he has raised certain valid concerns of  
6 things that they have said. And as a result of that,  
7 certain things that are in the direct that have --  
8 Exhibit 55, are things that the doctors have not known  
9 was coming until of course this week.

10 I -- I -- I must say and, again in  
11 fairness to Ms. Ramage, as she says these are unique  
12 circumstances. I understand the concerns of MIPUG as --  
13 as they're very well put forward, but ultimately I'd ask  
14 you to consider what Mr. Williams has said. I think he  
15 is correct that I do believe we can clarify certain  
16 matters and assist.

17 Having said that, and again, in all  
18 fairness to the panel, if you should determine today that  
19 the precedent being set here is too grave, that I -- I  
20 shouldn't be cross-examining as a person not adverse in  
21 interest as -- on behalf of clients not adverse in  
22 interest then what we would offer as an alternative is  
23 that simply there are several questions that the doctors  
24 do want put. And, again, in fairness to the panel, if --  
25 if -- if your precedent concern is too great then what I

1 would be asking is an opportunity to speak to Mr. Peters  
2 and if -- as an alternative he putting certain questions.  
3 And I appreciate, I think he actually closed yesterday --  
4 I had to slip away late in the af -- afternoon and I -- I  
5 didn't catch his end, but obviously I would be asking if  
6 you'd determine to go that way that he be allowed to ask  
7 a few more questions on behalf of -- on behalf of the  
8 doctors. Thank you.

9 MR. ROBERT MAYER: Mr. Wood, am I correct  
10 in assuming that your clients' concerns arise out of  
11 Sections 5 -- 4.7 and 5.7 of Exhibit 55?

12 MR. GAVIN WOOD: It's a --

13 MR. ROBERT MAYER: That's ICF response to  
14 KM comment on calculation of a 3.1 percent chance of any  
15 year, et cetera, and 5.7 is analysis of dependable energy  
16 treatment and planning and response to KM.

17 MR. GAVIN WOOD: That's two (2) of them,  
18 sir. But -- but again, in fairness it is a little  
19 broader than that. I must say, given the things that Ms.  
20 Ramage has said this morning I would be taking another  
21 look at some of the things that they were asking me to --  
22 to question on, and -- and possibly cut back, but you're  
23 right, those are certainly two (2) of them.

24 The -- the modelling matters in  
25 particular, there's -- there's two (2) or three (3)

1 things they want me to ask that would be of a very  
2 technical nature, and quite frankly his counsel is not in  
3 a position to go much further than ask the questions  
4 because obviously Mr. Rose has real expertise in this  
5 area.

6 My people do, and what they want to know  
7 is understand exactly what he's saying and then they're  
8 going to come in and respond to it.

9 THE CHAIRPERSON: Thank you, Mr. Wood.  
10 Ms. Ramage...

11

12 (BRIEF PAUSE)

13

14 THE CHAIRPERSON: Ms. Ramage, I  
15 apologize. I don't mean to rush you. This, of course,  
16 is new to the Board. We weren't aware of this  
17 development.

18 Is anything that the other counsels have  
19 said affected your -- your position?

20 MS. PATTI RAMAGE: Well, I think in  
21 fairness to all the counsel, this isn't just a Manitoba  
22 Hydro issue because anyone having a witness here has --  
23 has this same issue, but I would say because, as I said,  
24 it's a unique circumstance. It's not intended to reflect  
25 on Dr. Kubursi or Magee, and -- and I certainly -- I've



1 Williams.

2 MR. BYRON WILLIAMS: Yes, and thank you,  
3 and I was remiss, good morning, Mr. Chairman, Mr. Vice  
4 Chair, and Dr. Evans.

5 The -- be -- before I start, there are --  
6 there's one (1) true exhibit, and then an excerpt from  
7 the record that I'm going to suggest be marked as an  
8 exhibit that I'd -- I'd ask Mr. Singh to -- to distribute  
9 to the board.

10 My understanding is that Manitoba Hydro  
11 does not object to either of these documents, based upon  
12 my conversations with Ms. Boyd, but I'd just ask perhaps  
13 counsel for Manitoba Hydro to confirm that.

14 I'll have some suggested numbers as well,  
15 Mr. Chairman.

16

17 (BRIEF PAUSE)

18

19 MS. PATTI RAMAGE: I can confirm that  
20 that's correct. We don't have an objection to either of  
21 these documents. I'm just trying to locate my copies.

22 THE CHAIRPERSON: So I understand that  
23 one (1) is all -- tentatively marked CAC/MSOS Exhibit  
24 number 10. Is that correct?

25 MR. BYRON WILLIAMS: Yeah. First of all,

1 Mr. Chairman, the -- the one (1) which is truly a new  
2 document on the record is perhaps a PowerPoint but it's  
3 certainly some sort of document prepared by ICF  
4 International with the name of Mr. Rose sort -- and it's  
5 dated October 9th, 2009, and the title is, Financing For  
6 The Future, Can We Afford It, and I would suggest that be  
7 marked as CAC/MSOS Exhibit number 10.

8 THE CHAIRPERSON: Very good, sir.

9

10 --- EXHIBIT NO. CAC/MSOS-10:

11 Document entitled, Financing For The  
12 Future, Can We Afford It?

13

14 MR. BYRON WILLIAMS: And then the -- the  
15 second, and again probably not a true exhibit but  
16 consistent with the Board's practice, is just a very  
17 small excerpt from the report, coincidentally of the  
18 independent experts, Professors Kubursi and Magee, and I  
19 would ask that that be marked as CAC/MSOS Exhibit 11.

20 THE CHAIRPERSON: Very good. For ease of  
21 calling it up to mind, that makes sense.

22

23 --- EXHIBIT NO. CAC/MSOS-11:

24 Excerpt from report

25

1 MR. ROBERT MAYER: There seem to be  
2 several exhibits. I -- I'm looking at the page numbers,  
3 162, 188, 189, and 190.

4 Is the 162 a separate issue?

5 MR. BYRON WILLIAMS: Sorry, Mr. -- Mr.  
6 Vice Chair. It's a very voluminous report, and it's all  
7 from the same report, and I've just pulled out -- or my  
8 able assistant has simply pulled out four (4) pages,  
9 being page 162, page 188, page 189, and page 190.

10 Does that assist?

11 THE CHAIRPERSON: Well, for the record,  
12 then, you've -- you've noted the pages, and we've --  
13 we've encapsulated within an exhibit. Should be all  
14 right.

15 MR. ROBERT MAYER: It's just when I  
16 started doing a brief reading of it, Mr. Williams, I  
17 started reading the last line on page 162:

18 "the lowest five (5) year event, and  
19 the next ninety-four (94) year period  
20 may -- ICF International considers."

21 It didn't make a lot of sense.

22 MR. BYRON WILLIAMS: And I apologize for  
23 that, but I note that Professor Miller's in the back row,  
24 and I'm -- I'm always afraid to photocopy too much paper  
25 lest I be chastised.

1 MS. PATTI RAMAGE: Mr. Williams, before  
2 you go on, Ms. Fernandes, who for this hearing has agreed  
3 to take off her lawyer hat and be the regulatory monitor  
4 back here for us, advised me that, just for the cleanness  
5 of the record, this would actually be Exhibit 12 -- CAC  
6 12 and 13.

7 MR. BOB PETERS: I think I'm going to  
8 have to jump in on this. I've tried to keep quiet this  
9 morning, but can't do it any longer.

10 Mr. Chairman, it's my understanding, and  
11 it's something that I'd like to check over the -- the  
12 recess this morning and probably the lunch hour, that the  
13 numbering of the exhibit list that was circulated at the  
14 start of the hearing had a couple of errors in it under  
15 the CAC/MSOS numbering. And this morning we've tried to  
16 rectify that problem, and that would result in the  
17 numbers that Mr. Williams did present as being accurate.

18 So we will provide Ms. Ramage with an  
19 updated exhibit list which just clarifies a couple of --  
20 I'll call them typographical errors in the -- in the  
21 document earlier produced.

22 THE CHAIRPERSON: Very good, subject to  
23 check, as they always say.

24 Okay, Mr. Williams. Given that we're now  
25 10:02 and we have Mr. Rose for today, probably best to

1 get underway.

2 MR. BYRON WILLIAMS: Yes, and I'm as  
3 shocked as anyone that I actually have the right exhibit  
4 numbers.

5

6 ICF INTERNATIONAL PANEL:

7 JUDAH ROSE, Resumed

8

9 CROSS-EXAMINATION BY MR. BYRON WILLIAMS:

10 MR. BYRON WILLIAMS: Mr. Rose, good  
11 morning.

12 MR. JUDAH ROSE: Good morning.

13 MR. BYRON WILLIAMS: And just for your --  
14 just for ease of communication, I'm only likely to refer  
15 to three (3) documents today, and I just want to make  
16 sure that you have all three (3) of them at hand.

17 One (1) of them, of course, is your report  
18 from September 11th, 2009, which is Appendix 12.2 to this  
19 proceeding. Do you have that?

20 MR. JUDAH ROSE: Yes, sir.

21 MR. BYRON WILLIAMS: Secondly is Exhibit  
22 55, Manitoba Hydro Exhibit 55, which is the -- the  
23 document filed on February 22nd, 2011 by ICF  
24 International. You have that?

25 MR. JUDAH ROSE: Yes, sir.

1 MR. BYRON WILLIAMS: And finally,  
2 CAC/MSOS Exhibit 10, Financing for the Future, Can We  
3 Afford It? Those will be the three (3) primary documents  
4 I'll be referring to, and you have that, all three (3)?

5 MR. JUDAH ROSE: Yes, sir.

6 MR. BYRON WILLIAMS: And I'll apologize  
7 in advance. From time to time, I will be flipping  
8 between the documents, Mr. Rose, and I'll try and direct  
9 you to the page number. So you'll accept my apology in  
10 advance?

11 MR. JUDAH ROSE: Well --

12 MR. BYRON WILLIAMS: With a caveat?

13 MR. JUDAH ROSE: Sure, sure.

14 MR. BYRON WILLIAMS: Okay. And just in  
15 terms of all three (3) documents, would it be accurate to  
16 say that they were prepared under your direction and  
17 control?

18 MR. JUDAH ROSE: Yes, sir.

19 MR. BYRON WILLIAMS: And to the best of  
20 your knowledge and understanding, they are accurate?

21 MR. JUDAH ROSE: Yes.

22 MR. BYRON WILLIAMS: Recognizing that  
23 they're at different points in time, but they're accurate  
24 to the -- based upon that point in time, correct?

25 MR. JUDAH ROSE: Yes.

1 MR. BYRON WILLIAMS: Just for a -- a  
2 couple of minutes -- and I wanted to ask you to turn to  
3 your February 2011 report, which is marked as Exhibit --  
4 Hydro Exhibit 55, and actually right near the end of it,  
5 to the appendix, and specifically pages 101 through 103.  
6 Do you have those pages, sir?

7 MR. JUDAH ROSE: Yes, sir.

8 MR. BYRON WILLIAMS: And I'm just making  
9 sure that the Board has those pages as well.

10

11 (BRIEF PAUSE)

12

13 MR. BYRON WILLIAMS: Mr. Rose,  
14 essentially, and again we'll just talk about this for a  
15 couple minutes, but what you do in these three (3) pages,  
16 being pages 101 through 103, is present an examination  
17 of, first of all, regional population growth within the  
18 United States, as well as gross state product grown in  
19 the United States, and consider their relationship to  
20 electric sales growth in particular states. Would that  
21 be fair, sir?

22 MR. JUDAH ROSE: Yes.

23 MR. BYRON WILLIAMS: And at page one thou  
24 -- 1,000, excuse me, page 101 you note, without asking  
25 you to elaborate, that population growth is one of the

1 most important determinants of electricity demand growth,  
2 correct?

3 MR. JUDAH ROSE: Yes, it's an important  
4 determinant.

5 MR. BYRON WILLIAMS: Flipping to page  
6 102, you note as well that economic activity is another  
7 important determinant -- determinant of electricity  
8 demand growth, correct?

9 MR. JUDAH ROSE: Yes.

10 MR. BYRON WILLIAMS: And at page 103 you  
11 examine state-by-state growth in electricity sales  
12 between -- over the time period of 2000 to 2009; is that  
13 correct, sir?

14 MR. JUDAH ROSE: Yes.

15 MR. BYRON WILLIAMS: And just for those  
16 trying to decipher quickly the colours on the graph on  
17 page 103, the very -- I'm going to suggest, the very  
18 darkest colour, for -- for example, in states like North  
19 Dakota, South Dakota, and Wyoming represents states in  
20 which the average annual growth in electricity sales was  
21 more than 1.8 percent over this time period; is that  
22 accurate, sir?

23 MR. JUDAH ROSE: Yes.

24 MR. BYRON WILLIAMS: And, conversely, if  
25 we look to the very light grey, for example, in the top

1 left side of the map disregarding Alaska, we see that the  
2 very light grey represents states with -- with relatively  
3 low electricity sales growth over the time period in  
4 question. Would that be fair, sir?

5 MR. JUDAH ROSE: Yes.

6 MR. BYRON WILLIAMS: And just to make  
7 sure I understand the legend appearing in the bottom  
8 right-hand of this map, the very light grey, do I read  
9 that correctly as suggesting that that is less than zero  
10 electricity growth?

11 MR. JUDAH ROSE: Yes, that's correct. It  
12 just might be worth noting there's a particular metric  
13 that I used, it's 2000 to 2009 electrical energy growth  
14 as opposed to peak, and I'm emphasizing 2009 because that  
15 was the depth of the recession. So if I -- if I used the  
16 2010 number it perhaps would be still relatively low but  
17 not as low as -- as a negative growth. And if I used  
18 peak, peak has been growing generally faster than energy,  
19 so it would be a higher growth rate.

20 MR. BYRON WILLIAMS: Thank you for that,  
21 and thank you for that clarification. But generally,  
22 using the -- the measure that you did in this table, the  
23 light grey are essentially states undergoing an -- on --  
24 over this time period, negative growth in electricity  
25 sales as you measured it. Would that be correct?

1 MR. JUDAH ROSE: Yes.

2 MR. BYRON WILLIAMS: Staying -- excuse  
3 me. Staying, if you would, on page 103 for a just a  
4 second and referring you to the second bullet on the  
5 left-hand side, one (1) of the matters you conclude is  
6 that many of the states that showed either high  
7 population growth, economic growth, or both also showed  
8 higher levels of electricity sales growth. Would that be  
9 correct, sir?

10 MR. JUDAH ROSE: Yes.

11 MR. BYRON WILLIAMS: Now, directing your  
12 attention to the bottom bullet on page 103, you -- you  
13 note a couple exceptions to this general principle, do  
14 you not, sir?

15 MR. JUDAH ROSE: Yes. Are you -- you  
16 looking at the -- sorry, I'm sorry, which -- which  
17 document?

18 MR. BYRON WILLIAMS: Yeah, let me try  
19 that again. The bottom bullet still on page 103.

20 MR. JUDAH ROSE: Okay.

21 MR. BYRON WILLIAMS: You -- you note that  
22 there are a couple of exceptions to that general  
23 principle in that there are states with high population  
24 and economic activity growth but no significant growth in  
25 electricity sales.

1                   Is that correct?

2                   MR. JUDAH ROSE:    Yes.

3                   MR. BYRON WILLIAMS:   And the two (2) such  
4 states that you identify as being kind of exceptions to  
5 the rule, at least two (2), are Oregon and Idaho.

6                   Would that be fair?

7                   MR. JUDAH ROSE:    Those are the two (2)  
8 that are identified.

9                   MR. BYRON WILLIAMS:   And you attribute  
10 their record in terms of relatively low electricity sales  
11 growth, notwithstanding high population and economic  
12 activity growth, to the fact that they are some of the  
13 leaders in energy efficiency savings, correct?

14                   MR. JUDAH ROSE:    Yes.

15                   MR. BYRON WILLIAMS:   And again, I don't  
16 want to take too long but I do want to talk to you about  
17 Idaho just for a second or two (2).  If you flip back to  
18 page 101 just for a second, again in appendix -- or in  
19 the Exhibit 55, you'll see -- sir, I'm referring you to  
20 the fourth and second bullets, that Idaho over this time  
21 period was growing about -- in terms of population, at  
22 2.2 percent annual growth, about twice as fast as the  
23 average American growth in terms of population.

24                   Would that be fair?  Do -- do you see  
25 that, sir?

1 MR. JUDAH ROSE: I'm sorry, you're  
2 looking at where?

3 MR. BYRON WILLIAMS: Okay, we're on page  
4 101, sir.

5 MR. JUDAH ROSE: Got that.

6 MR. BYRON WILLIAMS: You'll note first of  
7 all on the fourth bullet that Idaho is above the annual  
8 percent of annual growth and population at 2.2 percent.  
9 And I would just draw to your attention and ask you to  
10 agree that that's about twice as much as the US  
11 population over the last ten years growth rate being 1  
12 percent.

13 MR. JUDAH ROSE: Yes.

14 MR. BYRON WILLIAMS: Do you see that?  
15 That's correct? Staying with Idaho and moving to the  
16 next page, being page 102, and -- and just to remind you,  
17 sir, the dark green looking to the legend, represents  
18 states that are growing annually at over 2.4 percent.

19 Do you see that?

20 MR. JUDAH ROSE: Yes.

21 MR. BYRON WILLIAMS: And Idaho was one  
22 (1) of those da -- dark -- darkly -- dark green states so  
23 we can conclude based upon your map that its annual  
24 growth rate is in excess of 2.4 percent over the time  
25 period in question, correct?

1 MR. JUDAH ROSE: Yes.

2 MR. BYRON WILLIAMS: And referring you to  
3 the second bullet on the left-hand side, that would be  
4 significantly higher than the US gross state product at  
5 1.6 percent.

6 Would that be fair?

7 MR. JUDAH ROSE: Yes.

8 MR. BYRON WILLIAMS: And again, just re -  
9 - reminding everyone, Idaho is essentially over the last  
10 decade a zero (0) growth state in terms of electricity  
11 sales.

12 Would that be fair?

13 MR. JUDAH ROSE: Yes.

14 MR. BYRON WILLIAMS: And, Mr. Rose,  
15 before we met, and you can turn to page 25 of your  
16 evidence if you've -- or of your exhibit, if you feel the  
17 need to. Certainly, I won't discourage you or encourage  
18 you. But in the bottom right-hand corner of page 25, and  
19 we'll just wait till everyone gets there. Page 25, Mr.  
20 Peters. I don't want to blame the Vice Chair for the  
21 delay, sir. The -- basically, in the bottom right-hand  
22 corner you present -- apart from Manitoba you present  
23 electricity rates, average electricity rates by state,  
24 correct, sir?

25 MR. JUDAH ROSE: Yes.

1 MR. BYRON WILLIAMS: And if we look to  
2 the extreme -- almost the extreme left-hand side, those  
3 will be the US states with the relatively lower  
4 electricity rates.

5 Would that be fair, sir?

6 MR. JUDAH ROSE: Yes.

7 MR. BYRON WILLIAMS: And it's hard to see  
8 but I'll ask you to agree that based upon your  
9 information present in this table Idaho has the second  
10 lowest electricity rates.

11 Would that be fair, sir?

12 MR. JUDAH ROSE: Yes, for the US states.

13 MR. BYRON WILLIAMS: Thank you for that.

14

15 (BRIEF PAUSE)

16

17 MR. BYRON WILLIAMS: Mr. Rose, I -- I  
18 want to turn -- primarily I'm going to be again referring  
19 to all three (3) documents, ICF documents, but I want to  
20 turn primarily for the next little while to Hydro Exhibit  
21 55, your evidence of February 22nd. Your -- your direct  
22 testimony. And start -- around page 15, you'll want to  
23 have that nearby, sir. Page 15.

24 MR. JUDAH ROSE: Five (5) --

25 MR. BYRON WILLIAMS: One (1) five (5).

1 MR. JUDAH ROSE: -- zero (0)?

2 MR. BYRON WILLIAMS: One (1) five (5).

3 MR. JUDAH ROSE: Okay.

4 MR. BYRON WILLIAMS: Not fifty (50), sir,  
5 one (1) five (5).

6 MR. JUDAH ROSE: Yes. Okay.

7

8 (BRIEF PAUSE)

9

10 MR. BYRON WILLIAMS: And Mr. Rose, just -  
11 - you -- I'm going to turn to these pages in just one (1)  
12 second, and I don't think you need to turn to your other  
13 report but I'm going to ask you to -- to see if you can  
14 recall that in your September 2009 evidence, and at the  
15 time that report was pa -- was prepared, the September  
16 2009 evidence, the expectation surrounding carbon  
17 regulation in the near future was that there would likely  
18 be a cap and trade program with -- with some sort of CO2  
19 allowance price, or CO2 tax, in the relatively near  
20 future.

21 Mr. Rose, do you recall that from your  
22 September 2009 evidence? I have a page reference if  
23 you're looking for it.

24 MR. JUDAH ROSE: And as a general matter,  
25 I -- I do recall that discussion.

1 MR. BYRON WILLIAMS: Okay. And just if  
2 you are -- the page reference was page 78, just for your  
3 counsel. She can -- if you'll accept that that's -- you  
4 -- certainly that's consistent with your recollection?

5 MR. JUDAH ROSE: Yes.

6 MR. BYRON WILLIAMS: Now, obviously when  
7 we look at the two (2) pieces of evidence, the September  
8 2009 report of ICF and the February 2011 direct testimony  
9 of ICF, it's not surprising that given a sixteen (16)  
10 month lag, or time period, that there is some differences  
11 in the information, or forecasts, available to you.

12 That's what we would expect when there's a  
13 sixteen (16) month difference in -- in terms of time  
14 frame, fair enough?

15 MR. JUDAH ROSE: Yes, and I -- I do want  
16 to bring that to the Board's attention, and that's why I  
17 included the material.

18 MR. BYRON WILLIAMS: And I -- and I thank  
19 you for that, and -- and I'm -- I'm going to come back to  
20 these pages in more detail perhaps in ten (10) or fifteen  
21 (15) minutes. Mr. Mayer -- Mr. Vice Chair will be  
22 clocking me.

23 But just when we -- and I certainly don't  
24 want to trespass upon the -- the territory so ably  
25 trampled upon by my friend, Mr. Peters, yesterday, but

1 when we look just at page 15 of your February report for  
2 a second, without getting into details at this point in  
3 time, there's no disputing that you've recently lowered  
4 your gas price forecast, correct?

5 MR. JUDAH ROSE: That's correct.

6 MR. BYRON WILLIAMS: And again we'll get  
7 back to that, but it would be fair to say that that  
8 change is material, correct?

9 MR. JUDAH ROSE: I would say it's  
10 significant, but you know, I'm not sure what you mean by  
11 material, but I wouldn't -- I wouldn't want to fight on  
12 that.

13 MR. BYRON WILLIAMS: Yeah.

14 MR. JUDAH ROSE: It's -- it's --

15 MR. BYRON WILLIAMS: Significant works  
16 for me, too, sir.

17 MR. JUDAH ROSE: -- significant in the  
18 sense that I wanted to bring it to the attention of the  
19 Board, and significant that I do have with me the  
20 undertaking that Chairman Lane requested, and -- and we  
21 can talk about that later. It's related to this.

22 MR. BYRON WILLIAMS: Certainly, and --  
23 and what I -- I'm going to suggest is, I'll -- certainly  
24 subject to the direction of the Board, whenever it's  
25 filed I'll reserve the right just to review it, and if I

1 have any additional questions, I'm -- I'm fine with  
2 whatever timing one -- one assumes.

3 MS. PATTI RAMAGE: If I could suggest, if  
4 -- if Mr. Rose finds he's going to refer to it during the  
5 evidence right now, we'll -- we'll maybe take a short  
6 break and distribute it. It was just passed up since --  
7 as we've been talking up -- as we've begun this morning,  
8 so we didn't distribute it earlier. But to keep things  
9 moving, let's keep going until Mr. Rose needs to refer to  
10 it.

11 MR. BYRON WILLIAMS: And that's certainly  
12 satisfactory to me, Mr. Chairman. I'm at the discretion  
13 of the Board, but I don't expect to grind through in a  
14 great deal of detail.

15

16 CONTINUED BY MR. BYRON WILLIAMS:

17 MR. BYRON WILLIAMS: So one (1)  
18 significant change is the change in the natural gas  
19 forecast.

20 We've agreed on that, sir?

21 MR. JUDAH ROSE: Yes.

22 MR. BYRON WILLIAMS: And again -- and you  
23 were certainly helpful in turning to pages 16 and 17, you  
24 were certainly helpful bringing this to the attention of  
25 the Board as well. And particularly page 17, another

1 significant change, you would agree, is an update in your  
2 forecast of US CO2 emission allowance prices?

3 Would that be fair?

4 MR. JUDAH ROSE: Yes, I think that's  
5 fair.

6 MR. BYRON WILLIAMS: And in terms of the  
7 significant change, focussing on the CO2 emissions, I'm  
8 going to suggest to you that one (1) change that's  
9 significant is the timing change, with you currently  
10 expecting them not to come into play till on or about  
11 2018, as compared to your previous estimate when it was  
12 about 2015.

13 Would that be fair?

14 MR. JUDAH ROSE: Yes.

15 MR. BYRON WILLIAMS: And another  
16 significant change I would suggest to you is the -- when  
17 we look to the 2018 year is the -- the difference in the  
18 magnitude of the forecast of CO2 emission allowance  
19 prices in play in 2018, with the previous forecast being  
20 some eleven (11) to sixteen dollars (\$16) per tonne  
21 higher than the current forecast for that particular  
22 year.

23 Would that be fair?

24 MR. JUDAH ROSE: Yes.

25 MR. BYRON WILLIAMS: And here's probably



1 that these regulations could have a significant upside  
2 for wholesale prices using, for example, a price of  
3 twenty dollars (\$20) per tonne in terms of the tax or CO2  
4 allowance costs.

5 Would that be fair?

6 MR. JUDAH ROSE: Yes.

7 MR. BYRON WILLIAMS: And just to let you  
8 know where I'm -- I'm going, I -- I want to understand  
9 two (2) things from you, Mr. Rose, in -- in our next few  
10 questions of cross-examination: one (1) is, I want to  
11 have a better understanding by what you -- you mean by  
12 the -- the types of CO2 emission controls; and secondly,  
13 I want to have a better sense of how you employed the  
14 term "likelihood".

15 So, Mr. Rose, you -- you understand with -  
16 - where I'm going directionally?

17 MR. JUDAH ROSE: I think so.

18 MR. BYRON WILLIAMS: Now, this brings us  
19 to page 23 of Exhibit 10, the Financing the Future  
20 document. And you'll see on that page, I'm going to  
21 describe it as a diagram or -- or a representation of two  
22 (2) axes. Is -- is that a suitable description for you,  
23 sir?

24 MR. JUDAH ROSE: Yes.

25 MR. BYRON WILLIAMS: And this report or

1 document -- presentation perhaps is the best word, was  
2 prepared in October 2009, or at least it was presented in  
3 October 2009, correct?

4 MR. JUDAH ROSE: Yes, it was prepared and  
5 presented in October 2009.

6 MR. BYRON WILLIAMS: And, of course,  
7 that's about the same time as your September 2009 report  
8 on behalf of Manitoba Hydro give or take a month.

9 MR. JUDAH ROSE: That's fair.

10 MR. BYRON WILLIAMS: And the -- it would  
11 be fair to say that some of the thinking and the analysis  
12 that we see represented in -- in this report might also  
13 be represented in your September 2009 report for Manitoba  
14 Hydro. Would that be fair, sir?

15 MR. JUDAH ROSE: Yes.

16 MR. BYRON WILLIAMS: And going to the big  
17 picture, it would be fair to say that as -- as ICF at  
18 this point in time was developing its forecasts of the US  
19 energy market in -- in future years, including  
20 generation, it was considering the potential impact of a  
21 variety of legislative and government mechanisms aimed at  
22 addressing both the pace of CO2 emissions as well as  
23 other emissions from the ener -- energy industry; would  
24 that be fair?

25 MR. JUDAH ROSE: Yes.

1                   MR. BYRON WILLIAMS:    You were trying to  
2 get your head around what were some of the potential  
3 government or legislative emission-control exercises that  
4 might be undertaken, and considering as well their impact  
5 on the market, including their impact on generation.

6                   Would that be fair?

7                   MR. JUDAH ROSE:     Yes.

8                   MR. BYRON WILLIAMS:    And we'll come to  
9 the diagram in more detail in a moment, but it would be  
10 fair to say that among the legislative and government  
11 mechanisms you were considering, there were at least  
12 three (3) in that menu, with one being stringent CO2 regu  
13 -- regulation as conceptualized in legislative efforts  
14 such the American Clean Energy and Security Act, short  
15 name, Waxman-Markey.

16                   Would that be fair?

17                   MR. JUDAH ROSE:     Yes.

18                   MR. BYRON WILLIAMS:    And another analytic  
19 construct or option you were looking at and trying to  
20 understand the impact of were more moderate cap and trade  
21 efforts.

22                   Would that be fair?

23                   MR. JUDAH ROSE:     Yes.

24                   MR. BYRON WILLIAMS:    And just so I  
25 understand, and I know you do a lot of work on cap and

1 trade, wou -- are -- would that be primarily CO2  
2 focussed?

3 MR. JUDAH ROSE: Yes, in this context it  
4 was. That is, in -- in terms of the presentation  
5 materials it was focussed on Co2.

6 MR. BYRON WILLIAMS: Thank you for that.  
7 And you were also looking at certain potential or  
8 existing administrative command and control outcomes,  
9 including, and I'll define them in a second, but NSR,  
10 BACT, and new unit restrictions.

11 Would that be fair?

12 MR. JUDAH ROSE: Yes.

13 MR. BYRON WILLIAMS: And -- and just for  
14 the purposes of clarification, would those again be  
15 primarily CO2 focussed, or would they be also focussed on  
16 other emissions such as HAPs, NOx's, N-O -- N-O-X, S-O-  
17 2s.

18 Would -- would it be fair to say that they  
19 had a bit broader focus than -- than purely CO2?

20 MR. JUDAH ROSE: I think that's fair,  
21 yes.

22 MR. BYRON WILLIAMS: So just for the  
23 purposes of definitions, you heard me say the acronym  
24 NSR, and would I be correct in suggesting to you that  
25 that represents the word "new source review"?

1                   Would that be correct, sir?

2                   MR. JUDAH ROSE:    Yes.

3                   MR. BYRON WILLIAMS:   And I'll ask you to  
4 confirm, if my understanding is correct, but I understand  
5 that the NSR process requires industry to undergo an  
6 Environmental Protection Agency pre-construction review  
7 for environmental controls if they propose either  
8 building new facilities or any modifications to existing  
9 facilities that would create a significant increase of a  
10 regulated pollutant.

11                   Is that a fair summary, sir?

12                   MR. JUDAH ROSE:    Yes, that is.

13                   MR. BYRON WILLIAMS:   And again, they  
14 wouldn't just be focussed on CO2 they would be focussed  
15 at a broader menu of potential pollutants, correct?

16                   MR. JUDAH ROSE:    Yes, that's the case.

17                   MR. BYRON WILLIAMS:   And when we look at  
18 the -- the capital letters "BACT," I'll suggest to you  
19 that that stands for "Best Available Control Technology".

20                   Would that be fair?

21                   MR. JUDAH ROSE:    Yes.

22                   MR. BYRON WILLIAMS:   And certainly that's  
23 a pollution standard, control standard, employed in a  
24 variety of industries in the United States and aimed not  
25 just at CO2 but a broader menu of potential pollutants,

1 correct?

2 MR. JUDAH ROSE: Yes.

3 MR. BYRON WILLIAMS: And I -- I believe  
4 you discussed new unit restrictions yes -- yesterday in  
5 the context of coal.

6 Do you recall that?

7 MR. JUDAH ROSE: I do recall that, yes.

8 MR. BYRON WILLIAMS: And basically,  
9 perhaps you could just elaborate quickly on that, what  
10 you mean by that?

11 MR. JUDAH ROSE: Yes, the -- I discussed  
12 yesterday a de facto moratorium on new power plant coal  
13 construction. So -- and the significance, of course, was  
14 for the utilities that were used to relying on coal power  
15 plants where the fuel costs are relatively stable and  
16 therefore the overall costs are relatively stable, they  
17 no longer have that option or it's a more -- a much more  
18 difficult option to obtain and therefore would have  
19 greater interest in something like the offerings of  
20 Manitoba Hydro.

21

22 (BRIEF PAUSE)

23

24 MR. BYRON WILLIAMS: And we'll come back  
25 to that in just one (1) second. But I believe the words

1 you used today were either no longer have that option or  
2 that it would be a much more difficult option.

3 Would that be fair?

4 MR. JUDAH ROSE: Yes.

5 MR. BYRON WILLIAMS: Okay. Turning to  
6 the two (2) axes, this diagram on page 23, I want to talk  
7 to you first about the horizontal axis which you'll agree  
8 with me is labelled "likelihood".

9 Is that fair, sir?

10 MR. JUDAH ROSE: Yes.

11 MR. BYRON WILLIAMS: And I'm going to  
12 suggest to you, and I'll ask you to confirm that this  
13 horizontal axis looks at the -- at this point in time at  
14 the likelihood of four (4) different legislative or  
15 administrative responses to either CO2 emissions or  
16 broader pollutant emissions.

17 Would that be fair?

18 MR. JUDAH ROSE: Yes.

19 MR. BYRON WILLIAMS: And in the bottom --  
20 and in terms of the diagram in terms of likelihood, the  
21 closer one (1) is to the left-hand side of the diagram  
22 the less likely it is in term -- that this will actually  
23 occur in -- in this estimation.

24 Would that be fair?

25 MR. JUDAH ROSE: Yes.

1                   MR. BYRON WILLIAMS:    So, for example, the  
2 no action or business as usual option was considered in  
3 October 2009 to be extremely unlikely.

4                   Would that be fair?

5                   MR. JUDAH ROSE:    Yes.

6                   MR. BYRON WILLIAMS:    And stringent CO2  
7 regulations, as reflected in Waxman-Markey, were  
8 considered to be a bit more pau -- plausible than no  
9 action, but not particularly likely in terms of their  
10 stringency.

11                   Would that be fair?

12                   MR. JUDAH ROSE:    Yes.

13                   MR. BYRON WILLIAMS:    And moderate cap and  
14 trade was considered to be within this matrix, relatively  
15 likely?

16                   MR. JUDAH ROSE:    Yeah, I think that's  
17 fair.   Yes.

18                   MR. BYRON WILLIAMS:    And administrative  
19 control and command options were either considered to be  
20 most likely and in fact in certain cases already in play,  
21 correct?

22                   MR. JUDAH ROSE:    Yes, that's correct.

23                   MR. BYRON WILLIAMS:    Mr. Rose, just in  
24 terms of that figure of twenty dollars (\$20) per tonne  
25 that we talked about from your evidence of sep --

1 September 2009 in terms of CO2 emissions, would that flow  
2 from a sense that a -- if we look to this matrix that a  
3 moderate cap and trade of that magnitude was relatively  
4 likely? Is that basically where -- if I was looking for  
5 where that figure came from, would that be a fair  
6 representation of your opinions at the time?

7 MR. JUDAH ROSE: Yes, that's correct.

8 MR. BYRON WILLIAMS: Now, turning your  
9 attention to the vertical axis, you'll see that it's  
10 labelled "Impact on Coal Generation," correct?

11 MR. JUDAH ROSE: Yes.

12 MR. BYRON WILLIAMS: And what the arrow  
13 means, I will suggest to you, is that the higher up the  
14 diagram you grow -- you go, the bigger the expected  
15 impact on coal generation is the particulate -- is -- is  
16 anticipated to be the particular effect.

17 Would that be fair enough?

18 MR. JUDAH ROSE: Yes.

19 MR. BYRON WILLIAMS: Not very well put,  
20 but I -- I think we know what I'm -- I'm saying.

21 MR. JUDAH ROSE: I can't --

22 MR. BYRON WILLIAMS: And --

23 MR. JUDAH ROSE: -- I can't agree with  
24 that. It was well put.

25 MR. BYRON WILLIAMS: I'm starting to

1 really like you, Mr. Rose.

2 MR. JUDAH ROSE: Yeah.

3 MR. BYRON WILLIAMS: In -- in terms of  
4 the impact on -- relative impact on coal generation, you  
5 -- obviously the -- the stringent CO2 regulation as  
6 reflected in Waxman-Markey was expected to have, of these  
7 four (4) options, the -- the heaviest impact, correct?

8 MR. JUDAH ROSE: That's correct.

9 MR. BYRON WILLIAMS: And you certain  
10 describe it, on the right-hand side of this page, as  
11 posing a huge burden on investment, correct?

12 MR. JUDAH ROSE: That's correct.

13 MR. BYRON WILLIAMS: And it's fair to say  
14 -- I -- I'm going to come back to this table in just a  
15 second. I just want to elaborate on that point for a --  
16 a second, again looking at your evidence from October  
17 2009.

18 I wonder if you could turn to page 27 of  
19 this report while keeping your finger on page 23, if you  
20 don't mind.

21 Can you do that for me, sir.

22 MR. JUDAH ROSE: Yes.

23

24 (BRIEF PAUSE)

25

1 MR. BYRON WILLIAMS: Same report, page  
2 27, and -- and if we're lucky and we're all on the same  
3 page, Mr. Rose, what we're going to see here is a  
4 projection from ICF on or about October 2009 of the  
5 cumulative capacity additions of generation assuming that  
6 the more stringent CO2 regime was put in place.

7 Would that be fair, sir?

8 MR. JUDAH ROSE: Yes, that's correct.

9 MR. BYRON WILLIAMS: So based upon what  
10 you knew at the time, and based upon those four (4)  
11 potential responses, this was basically an estimate of  
12 the impact of coal addition -- or plant additions and  
13 retirements by -- between 2009 and two (2) -- 2036.

14 Would that be fair?

15 MR. JUDAH ROSE: Yes, that's correct.

16 MR. BYRON WILLIAMS: And what you note in  
17 the first left-hand bullet on -- on page 27 is at that  
18 point in time you were projecting that under the  
19 stringent scenario cumula -- cumulative coal retirements  
20 by 2036 would be 122 gigawatts or well above the  
21 business's usual scenario.

22 Would that be fair?

23 MR. JUDAH ROSE: Yes.

24 MR. BYRON WILLIAMS: Would it be fair to  
25 say, as well, that you expected the impact of stringent

1 CO2 regulation, in terms of cumulative coal retirements,  
2 to be materially or significantly higher than the impact  
3 of moderate cap and trade CO2 regulations?

4 Would that be fair?

5 MR. JUDAH ROSE: Yes.

6 MR. BYRON WILLIAMS: And likewise, you  
7 considered it the expected impact of stringent CO2  
8 regulations in terms of cumulative coal retirements to be  
9 higher still when compared to the impact of  
10 administrative command and control outcomes.

11 Would that be fair, based upon what you  
12 knew in 2009?

13 MR. JUDAH ROSE: Yes, I think that's  
14 fair.

15 MR. BYRON WILLIAMS: Mr. Rose, I  
16 certainly don't, at this point in time, mean to put you  
17 to any additional work, but are there in the public  
18 domain similar estimates of ICF in terms of the -- from  
19 about this period in time, focussing not on the stringent  
20 CO2 reductions, but on the moderate cap and trade or the  
21 administrative command and control or the business-as-  
22 usual options.

23 So, in other words, is there similar  
24 information in the public domain from 2009, not on  
25 stringent CO2 but the other options?

1 MR. JUDAH ROSE: Yes. Well, actually, on  
2 the next page, on page 18, it's not exactly from the same  
3 period, but it is related to the, you know, more -- the  
4 moderate stringent CO2 cases.

5 MR. BYRON WILLIAMS: And I -- then that's  
6 very helpful, Mr. -- Mr. Rose, and I'll come to that in a  
7 second. So that's -- that's helpful, and I'll come to  
8 those in just a second then, okay?

9 MR. JUDAH ROSE: Okay. You know, with  
10 respect to that period of time, there might be public  
11 information. I just -- sitting here, I just don't know.

12 MR. BYRON WILLIAMS: And I'll reflect if  
13 -- if I wish to make further inquiries in that regard.

14 Flipping back, if you would, for just one  
15 (1) second, Mr. Rose, to page 23 of this same document,  
16 and -- and let's assume -- let's assume it's today. It's  
17 2011 instead of 2009. And, first of all, on the  
18 likelihood matrix, or the axes, it would be fair to say  
19 that you can still consider the no-action option to be  
20 extremely unlikely.

21 Would that be fair?

22 MR. JUDAH ROSE: In terms of today's  
23 condition, yes, I -- I think that that's quite unlikely.

24 MR. BYRON WILLIAMS: And again, in terms  
25 of today's condition, would you conclude that, within the

1 foreseeable future, stringent CO2 regulation is perhaps  
2 even less likely than it was in October 2009?

3 MR. JUDAH ROSE: Yes, it is less likely,  
4 for sure.

5 MR. BYRON WILLIAMS: And in terms of  
6 moderate cap and trade regulation, would it be fair to  
7 say that, sitting here today, you still consider it to be  
8 relatively likely, but at a lower level and farther out  
9 into the future?

10 Would that be fair?

11 MR. JUDAH ROSE: Yes. Effectively, it  
12 could either be that it's less likely at the same level,  
13 or more likely at a lower level, and the net of that is,  
14 when you multiply the probability times the price, that's  
15 what I was presenting on page 16 -- I mean at 17, I'm  
16 sorry.

17 MR. BYRON WILLIAMS: Okay. And -- and  
18 with administrative command and control outcomes, some  
19 are in place already, and you'd agree that there's still  
20 a fairly high likelihood?

21 MR. JUDAH ROSE: Yes. You know, it is a  
22 very complex situation vis-a-vis environmental  
23 regulation. I don't think there's any doubt about it.  
24 It's -- you have a multiplicity of pollutants, different  
25 types of power plants, and you have a situation in which

1 there's marketization that has been proposed and has  
2 existed -- I alluded to it ye -- the other day -- where  
3 you have to have these permits and they're trading at  
4 market prices, and it adds a cost to your operating your  
5 power plants. So that makes it extra complicated as  
6 opposed to the more standard command and control.

7                   And so what's happening is is that the  
8 stringent and the moderate cap in trade, to -- to make  
9 that happen, required more new legislation. The  
10 administrative controls are under existing legislation,  
11 and therefore are very much subject to the actions of --  
12 of the administration of the government, the president,  
13 and therefore -- but even more, in some cases, the court  
14 is forcing the government to take action.

15                   And I noted this morning there was a step  
16 in that direction -- yesterday in that -- in that  
17 direction with respect to the hazardous air pollutants.  
18 So unless Congress overrides the courts via a change in  
19 the legislation, it's difficult to see how you would  
20 avoid some of these very -- very stringent regulations,  
21 albeit not directly on CO2, but more on these other  
22 pollutants.

23                   And I think the thing that I was trying to  
24 convey to the Board was the concern that the owners of  
25 the power plants south of the border are subject to very

1 significant risks of having to shut down their power  
2 plants within as little as two (2) to three (3) years  
3 from now unless there's a -- a court ruling giving them  
4 more flexibility. Having been on notice and failure to  
5 take action to achieve alternative reliable supplies  
6 could be considered imprudent on their part.

7                   And you can imagine if -- well, therefore,  
8 their interest in obtaining supply from Manitoba Hydro  
9 that's not subject to any of these. There's -- there's  
10 no air pollution associated with the production of the  
11 power, essentially.

12                   MR. BYRON WILLIAMS:   And thank you --  
13 thank you very much for that. That's very helpful in  
14 what I'm trying to get a better sense of. Just I'll come  
15 to -- back to the command and controls in a second. In  
16 terms of intensity, in terms of moderate cap and trade  
17 and its impact on coal generation, compared to where you  
18 had it on the table -- or excuse me, the diagram at this  
19 period in time, would it be about the same or perhaps  
20 somewhat lower?

21                   MR. JUDAH ROSE:    These are the  
22 administrative?

23                   MR. BYRON WILLIAMS:   No, I'm speaking of  
24 moderate cap and trade in terms of CO2 first.

25                   MR. JUDAH ROSE:    And -- and relative to

1 what I had on page --

2 MR. BYRON WILLIAMS: Yes.

3 MR. JUDAH ROSE: -- 23 here --

4 MR. BYRON WILLIAMS: Yeah.

5 MR. JUDAH ROSE: -- of the PowerPoint?

6 It is less, the information that we, you know, learned,  
7 and -- and this is sort of the corporate assessment. You  
8 know, we're four thousand (4,000) people, and I am  
9 testifying on behalf of the firm in that regard, is -- is  
10 that the con -- the view of the firm is that it's -- it's  
11 less likely -- either less likely to -- to occur or that  
12 what's likely to happen is is that there'll be more -- be  
13 less stringent.

14 So everyone's sitting there and saying,  
15 I've got to have a dollar tonne -- per tonne CO2 penalty  
16 for fossil emissions. People are disputing what it is  
17 likely to be, and that whatever that dispute is, the  
18 dispute has shifted such that the numbers are somewhat  
19 lower, as reflected on page 17, I think is a reasonable  
20 expectation.

21 I hope that was an answer to your  
22 question.

23 MR. BYRON WILLIAMS: Yeah, but -- no,  
24 you're doing fabulous, and -- and I thank you for that.  
25 I shouldn't be complimenting you too much. Where I'm

1 trying to get at now is just on the left-hand side -- or  
2 the -- the vertical axis. In terms of your expectation -  
3 - you know, you've lowered for moderate cap and trade.

4 In terms of its anticipated impact on coal  
5 generation would it in 2011 as compared to 2009 occupy  
6 about the same place on the diagram in terms of its  
7 impact on coal generation, or would moderate cap and  
8 trade focus on CO2 be somewhat lower --

9 MR. JUDAH ROSE: Okay.

10 MR. BYRON WILLIAMS: -- is my question.

11 MR. JUDAH ROSE: It would be lower. So,  
12 again, the moderate cap and trade -- the likely moderate  
13 cap and trade outcome is at a lower impact in coal  
14 generation.

15 MR. BYRON WILLIAMS: Now -- now moving to  
16 the administrative command and controls, would it be, in  
17 your view, the same or somewhat higher?

18 MR. JUDAH ROSE: What's happened is  
19 there's been a shift away from the possibility or the  
20 likelihood of explicit CO2 controls to the use -- higher  
21 use of the administrative controls, and that's a virtue  
22 of the decision of the administration but also court  
23 orders and the fact that the deadlines are rapidly  
24 approaching.

25 MR. BYRON WILLIAMS: And if you were

1 doing this diagram representation today, focussing on  
2 administrative command and controls, it'd be fair to say  
3 that it -- it would still not approach the si --  
4 stringent CO2 regulation impact on coal generation.

5 Would that be fair?

6 MR. JUDAH ROSE: I think that that's  
7 fair, but what's happened is it's become so stringent  
8 that it's -- it's moved fairly close. I think -- and  
9 maybe one metric we had is we -- when we were flipping  
10 through the slides we had 122 gigawatts of coal  
11 retirements by 2036. And then if you look on page 18,  
12 the assessments that we've been doing for the Edison  
13 Electric Institute, so that's the se -- third and fourth  
14 row on page 18, those were released publically ten (10)  
15 days ago.

16 And you can see that the coal power plant  
17 retirement is fifty-six (56) to ninety-five (95), so that  
18 gives you a sense -- and that -- but that's only through  
19 2020, so there would be some additional. So it has  
20 become more moderate in terms of the -- that particular  
21 metric, but perhaps I think surprisingly stringent given  
22 what's happened in CO2.

23 MR. BYRON WILLIAMS: Thank you. That's  
24 very, very helpful. And I would like to turn for a  
25 couple of moments to pages 18 and 19 of Exhi -- Hydro

1 Exhibit 55, which is your February 22nd report. And the  
2 Vice Chair asked you a few -- page -- pages 18 and 19.  
3 The Vice Chair did ask you a few questions about this  
4 yesterday.

5 What we see represented on page 18 is a  
6 forecast of US power plant retirements out a certain  
7 period of time due to EPA regulation as measured in  
8 gigawatts, correct?

9 MR. JUDAH ROSE: Yes, that's correct.

10 MR. BYRON WILLIAMS: And just for a  
11 second to flip to the next page, you'll see a similar  
12 calculation of plant retirements do to EPA regulations  
13 but measured in -- by region and -- and -- or reflected  
14 by region and measured in gigawatts.

15 Is that fair, sir?

16 MR. JUDAH ROSE: Yes.

17 MR. BYRON WILLIAMS: And I think we've  
18 answered my first question of clarification. I was going  
19 to ask but by EPA regulations you're referring to in the  
20 -- in the heading of this -- this -- both these tables  
21 both -- both CO2 emission regulations but in -- in  
22 particular other emission regulations.

23 Is that what you're referring to, sir?

24 MR. JUDAH ROSE: Yes. For example, if  
25 you look at the EEI Scenario 1 where there's 56,000

1 megawatts of coal retirements, that assumes no CO2 dollar  
2 per tonne charge. Whereas Scenario 2 does assume that  
3 there's a dollar per tonne charge, and that's the ninety-  
4 five thousand (95,000) or the 95 gigawatts. 95,000  
5 megawatts/95 gigawatts. They're equivalent by 2020.

6 And so the first two (2) ICF rows have CO2  
7 in there as an addition to the regulations on SO2,  
8 mercury, and in that particular case also coal, ash, and  
9 water usage. So it is -- it is both the CO2 and the  
10 other pollutants depending on the scenario.

11 MR. BYRON WILLIAMS: And I'm not going to  
12 go in burdensome detail on all these, but there are, and  
13 I thank you for pointing out, the Edison Electric  
14 Institute scenarios. I do want to talk about the top  
15 four (4) on this table for just a second.

16 First of all, none of these -- let's start  
17 with IC - the top four (4) are all produced using ICF  
18 source material.

19 Would that be fair, sir?

20 MR. JUDAH ROSE: Yes, these are all  
21 outputs not assumptions of the IPM model that I discussed  
22 yesterday, that's a proprietary tool that's used both by  
23 the federal government of the United States, the  
24 Environmental Protection Agency. It's also used here in  
25 Canada by Environment Canada and it's also being used by

1 the Edison Electric Institute which is the organization  
2 representing the privately-held utilities in the United  
3 States like Xcel. Privately held in the sense they have  
4 stock.

5 MR. BYRON WILLIAMS: So I gave you some  
6 free advertising and that's fine, I just want to be  
7 careful time-wise that we -- we don't give you too many  
8 pitches like that.

9 MR. JUDAH ROSE: Okay.

10 MR. BYRON WILLIAMS: I'll -- through --  
11 through the Chair I'll caution you about that.

12 MR. JUDAH ROSE: Okay.

13 MR. BYRON WILLIAMS: In terms of the ICF  
14 Q3, it's not dated. When did that take place, sir?

15 MR. JUDAH ROSE: It's Q3 2010. I don't  
16 have the exact date.

17 MR. BYRON WILLIAMS: And the Q4 would be  
18 which year, sir?

19 MR. JUDAH ROSE: Also 2010.

20 MR. BYRON WILLIAMS: And the Q3 and Q4 we  
21 can see both on page 18 and 19, present similar but --  
22 but different estimates of the -- the retirement  
23 schedule. I wonder if you can outline the differences at  
24 a high level in terms of these methodologies, either  
25 today or by way of an undertaking?



1 really sure it's an undertaking. It's just Mr. -- my  
2 understanding is Mr. Rose will certainly review with his  
3 colleagues, and if he -- if his evidence is changed he'll  
4 advise the tribunal through counsel.

5 Is that fair?

6 MR. JUDAH ROSE: Yes.

7 MR. BYRON WILLIAMS: In terms of the --  
8 the Q3 and Q4 assumptions, would -- would there be an --  
9 and are you aware whether or not there was an emission  
10 allowance assumed in them, sir? A CO2 emission allowance  
11 or tax, within it?

12 MR. JUDAH ROSE: Yes, in -- in both cases  
13 there is an emission allowance that's comparable to the  
14 one (1) on page 17 in the column marked, Previous, and  
15 it's not exactly the same, but it's -- it's fairly  
16 similar.

17 MR. BYRON WILLIAMS: So just so I  
18 understand, sir, the assumption in terms of emission  
19 allowance reflected in ICF Q3 and ICF Q4 would be your  
20 previous assumption in terms of emission allowance?

21 Is that what you meant, sir?

22 MR. JUDAH ROSE: Yes. It would be  
23 similar. So if you just -- if you just take a quick look  
24 at it, you'll see the numbers of twenty-two (22), twenty-  
25 four (24), twenty-five (25), twenty-six (26). The Q3 and

1 Q4 are, you know, maybe twenty (20), rather than twenty-  
2 five (25), or something. So they're similar in -- in  
3 magnitude.

4 The -- the current is the -- one (1) of  
5 the runs that -- the computer projections that we're  
6 currently conducting right now, and that's why it's ten  
7 (10) to fifteen (15) because it's -- we're -- we're  
8 looking at that range, you know, as a corporation as to  
9 what we should adjust it to.

10 MR. BYRON WILLIAMS: So if -- if one were  
11 to rerun ICF Q3 and ICF Q4, all other things being equal,  
12 based upon the current assumptions in terms of CO2  
13 emission allowance, one would expect the retirements to  
14 be somewhat lower? Anticipated retirements.

15 Would that be fair, sir?

16 MR. JUDAH ROSE: Yes, I think that that's  
17 fair. I think it might be, you know, sixty (60), sixty-  
18 five (65) instead of seventy-three (73), or something  
19 like that.

20 The -- the main driver here is -- or an  
21 important driver is the fact that we're looking at power  
22 plants that don't already have the pollution controls.  
23 Not for CO2 and -- because those don't exist. It's the  
24 pollution controls for the SO2, the NOx, the -- the  
25 particulates. They have something, but not exactly what

1 they need, so those are the ones that are the ones that  
2 are most likely to be retired.

3 THE CHAIRPERSON: Mr. Williams, would it  
4 be acceptable to you to take our break now?

5 MR. BYRON WILLIAMS: If it's acceptable  
6 to you, Mr. Chairman, it's always acceptable.

7 THE CHAIRPERSON: So be it.

8

9 --- Upon recessing at 10:57 a.m.

10 --- Upon resuming at 11:19 a.m.

11

12 THE CHAIRPERSON: Okay. Welcome back,  
13 everyone. First -- first of all, Ms. Ramage and Mr.  
14 Rose, thank you very much. You want to introduce this  
15 latest exhibit?

16 MS. PATTI RAMAGE: Yes, very quickly.  
17 This is Manitoba Hydro Undertaking 56, where Mr. Rose is  
18 -- or ICF is providing an extension of its natural gas  
19 forecast out ten (10) to fifteen (15) years from the  
20 forecast on page -- we're going to ignore what page it  
21 was on so we can move quickly.

22 THE CHAIRPERSON: We can find it.

23 MR. BOB PETERS: Yeah. Exhibit Manitoba  
24 Hydro-60.

25

1 --- EXHIBIT NO. MH-60: Response to Undertaking 56

2

3 THE CHAIRPERSON: Thank you. With  
4 respect to the --

5 MR. JUDAH ROSE: Can I just -- sorry, I  
6 just want to make sure that -- that I add for the record  
7 that it's the extension of the October 2010 forecast, as  
8 per your request.

9 THE CHAIRPERSON: Yes, thank you very  
10 much.

11

12 (WITNESS RETIRES)

13

14 RULING ON MOTION TO DISALLOW THE CROSS-EXAMINATION OF ICF  
15 WITNESS BY MR. GAVIN WOOD:

16 THE CHAIRPERSON: With respect to the  
17 matter that we took away with us on the break, the Board  
18 has considered Manitoba Hydro's request with respect to  
19 whether counsel for the independent witnesses should be  
20 allowed to cross-examine witnesses in this proceeding,  
21 and -- and if so, to what extent?

22 The Board concludes that the counsel for  
23 the independent witnesses will be permitted to pose  
24 questions to the witnesses in this proceeding. The Board  
25 acknowledges that the role of the independent witnesses

1 is unique, as noted by the parties. The Board does not  
2 consider the role of the independent witnesses or this  
3 ruling to be precedent setting.

4           The unique circumstances of this  
5 application, as recorded in the Board's procedural  
6 orders, stands this case on its own. Parties ought not  
7 to consider the procedures in this application with  
8 respect to the independent witnesses as precedent  
9 setting. Likewise, the Board's decision to permit  
10 counsel for the independent witnesses to cross-examine  
11 witnesses should not be taken as a precedent.

12           In deciding to allow counsel to the  
13 independent witnesses to cross-examine ICF, the Board  
14 notes that ICF, in its PowerPoint presentation, Exhibit  
15 Manitoba Hydro 55, raised issues for the first time  
16 related to the independent witnesses' report. To allow  
17 the Board to receive the best evidence from all  
18 witnesses, there may be need for clarification of various  
19 points made by others.

20           Allowing counsel for the independent  
21 witnesses to seek clarification and better understanding  
22 of the factual underpinnings of ICF's report as it  
23 pertains to the issues raised by the independent experts  
24 is expected to enhance all parties' understanding of the  
25 issues, including the Board's, and advance the public

1 interest.

2 So the Board will permit counsel for the  
3 independent witnesses to pose his questions. Based on  
4 the -- on the questioning, the Board will monitor whether  
5 the questions go beyond information, verification, and  
6 clarification, and whether there is adversarial concerns  
7 that may arise. So we will see how it develops.

8 Mr. Williams...?

9 MR. BYRON WILLIAMS: Yes. Thank you, Mr.  
10 Chair. And certainly we're mindful of the time. Just  
11 based upon where I -- where I am in my binder, I can  
12 indicate to the Board that I'm not that far off schedule,  
13 but a little bit, and I anticipate that I may run a  
14 little bit into the afternoon.

15 Certainly on my part, I'm prepared to --  
16 to return earlier, if that would assist the Board and Mr.  
17 Rose, to make sure he doesn't miss any flights. And I  
18 think, just in canvassing with other counsel on this side  
19 of the room, I -- I don't think we're in terribly  
20 desperate straits in terms of -- of time, but there is a  
21 risk that we might ru -- have to run a bit late as well.

22 THE CHAIRPERSON: Okay. We'll just watch  
23 the time as we go. Please proceed.

24

25 ICF INTERNATIONAL PANEL:

1 JUDAH ROSE, Resumed

2

3 CONTINUED CROSS-EXAMINATION BY MR. BYRON WILLIAMS:

4 MR. BYRON WILLIAMS: Thank you, Mr. Rose.

5 When we left off, we were looking at Manitoba Hydro  
6 Exhibit 55, and in particular page -- page 18. Exhibit  
7 55 is your evidence, of course, from February 2011.

8 Mr. Rose, I believe we had finished  
9 chatting about the -- the ICF Q3 and Q4 estimates or  
10 forecasts, and we were on common ground, I'll suggest to  
11 you, that those scenarios were constructed assuming the  
12 previous CO2 scenario rather than the current CO2  
13 scenario presented by ICF.

14 Is that correct, sir?

15 MR. JUDAH ROSE: Yes.

16 MR. BYRON WILLIAMS: Now, when we turn to  
17 the -- just -- the EE -- the Edison Electric Scenarios 1  
18 and 2 on -- on the report EEI Scenarios, your -- your  
19 evidence, I believe, was that they were released within  
20 just the past couple of days.

21 Is that right?

22 MR. JUDAH ROSE: Yes, approximately ten  
23 (10) days.

24 MR. BYRON WILLIAMS: And you testified  
25 earlier, I'll ask you to confirm, that the primary

1 difference between the Edison Electric Scenario 1 and  
2 Scenario 2 is that Scenario 1 assumes no CO2 emission  
3 allowance, while Scenario 2 assumes a -- some sort of CO2  
4 emission allowance.

5 Is that fair, sir?

6 MR. JUDAH ROSE: Yes.

7 MR. BYRON WILLIAMS: And are there any  
8 other material differences between these scenarios that  
9 you can draw to the tribunal's attention?

10 MR. JUDAH ROSE: That's the main one.

11 MR. BYRON WILLIAMS: Now, I'm assuming  
12 that the EEI Scenario 2 now assumes CO2 at the current  
13 estimate of ICF.

14 Is that fair, sir?

15 MR. JUDAH ROSE: No, I believe it's  
16 actually -- it's a specification by the Edison Electric  
17 Institute itself using our computer model. I believe the  
18 number is closer to the moderate range that we di -- that  
19 we discussed earlier, in the twenties -- dollars a tonne.  
20 I don't have the exact -- and -- and escalating over time  
21 in real -- real terms. I don't have the exact numbers.  
22 And, again, it reflects an as -- an assumption set by the  
23 Edison Electric Institute.

24 MR. BYRON WILLIAMS: Okay, thank you for  
25 that. So just so I understand, the assumption in terms

1 of CO2 emission allowances for the Edison 2 scenario is  
2 commencing with a twenty dollar (\$20) CO2 allowance, in  
3 that range, and progressing higher over time.

4 Is that fair, sir?

5 MR. JUDAH ROSE: Yes, that's -- that's  
6 fair.

7 MR. BYRON WILLIAMS: And that assumption  
8 would be at odds or materially different from the current  
9 best estimate of ICF.

10 Would that be accurate?

11 MR. JUDAH ROSE: Yes, and the ICF  
12 estimate falls between the 1 and the 2, zero and the  
13 number that's in the 2, so that's what led me to the  
14 sixty-five (65) to -- dollar -- 65 gigawatt estimate when  
15 we implement our new numbers, roughly.

16 MR. BYRON WILLIAMS: And -- and, again,  
17 recognize -- and I heard you talk about your complex  
18 modelling system, and recognizing that -- that you don't  
19 have a final product, but your evidence is that you would  
20 estimate that if one were looking at power plant  
21 retirements due to EPA relu -- regulations out to 2020  
22 and using the more current CO2 emission allowance  
23 estimates of ICF it would be in the range somewhere of 65  
24 gigawatts.

25 Is that your evidence, sir?

1                   MR. JUDAH ROSE:    It is, but I -- I caveat  
2   it by saying it's very approximate.  And I -- I have to -  
3   - I do have to go back to the United States, I don't want  
4   my colleagues to beat me up.  We don't have the run yet,  
5   and that's my rough assessment.

6                   MR. BYRON WILLIAMS:   Okay, thank you for  
7   that.  Just turning to page 19 for just a second, and  
8   what page 19 does is presents similar estimates but  
9   broken down by region.

10                  Is that correct, sir?

11                  MR. JUDAH ROSE:    Yes.

12                  MR. BYRON WILLIAMS:   And certainly for  
13   the top four (4) forecasts on page 19, being the ICF Q3s  
14   and Q4s and the EEI Scenarios 1 and 2, you'll note that  
15   there is a footnote 3 following all four (4) of those  
16   forecasts.

17                  Do you see that, sir?

18                  MR. JUDAH ROSE:    Yes, I do.

19                  MR. BYRON WILLIAMS:   And, of course,  
20   there -- there's probably, you'll agree with me, a typo  
21   at the bottom of the page and that there's no footnote 3  
22   there, but I'm assuming the last footnote is footnote 3.

23                  Is that right, sir?

24                  MR. JUDAH ROSE:    Yes, that believes to --  
25   that's a typo.  Let me just check one (1) sec.

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(BRIEF PAUSE)

MR. JUDAH ROSE: Yes, that's correct.

MR. BYRON WILLIAMS: Okay. So when I read the estimates of power plant retirements measured in gigawatts for the MISO region presented by ICF and the Edison Institute I should understand, first of all, that Kentucky is reported with MISO in -- in this information.

Is that correct, sir?

MR. JUDAH ROSE: Yes. It used to be a member of MIS -- MISO, it's now on its own, primarily --

MR. BYRON WILLIAMS: And in -- sorry to interrupt you. And in terms of MISO -- it's -- in terms of Kentucky, excuse me, could you provide either now or by way of an undertaking the number of gigawatts associated with the State of Kentucky in terms of anticipated power plant retirements?

(BRIEF PAUSE)

MR. JUDAH ROSE: Yeah.

(BRIEF PAUSE)

1 MS. RAMAGE: Mr. Williams, if we could  
2 take that under advisement. There's a number of issues  
3 in terms of -- with respect to that, one (1) of which,  
4 that immediately jumps to mind, is breaking down the  
5 forecasts and how much information.

6 So if we could take it under advisement.  
7 And it will definitely not be coming in the next day or  
8 so because the people that Mr. Rose would have to review  
9 it with are -- it will come back through Manitoba Hydro  
10 with -- you'd have to understand, without Mr. Rose here  
11 to deal with anything any further.

12 MR. BYRON WILLIAMS: Thank you.

13

14 --- UNDERTAKING NO. 63: UNDER ADVISEMENT - ICF to  
15 indicate the number of  
16 gigawatts associated with the  
17 State of Kentucky in terms of  
18 anticipated power plant  
19 retirements

20

21 CONTINUED BY MR. BYRON WILLIAMS:

22 MR. BYRON WILLIAMS: Going on just in  
23 that footnote, you -- we see as well that firm  
24 retirements are included, including approximately 6  
25 gigawatts of coal.

1 Do -- do you see that reference, sir?

2 MR. JUDAH ROSE: Yes, I do.

3 MR. BYRON WILLIAMS: And what does one --  
4 what does -- what is meant by "firm retirements"?

5 MR. JUDAH ROSE: Basically, the world of  
6 retirements is divided into two (2) parts in our -- in  
7 our world, it's firm and non-firm. The firm are things  
8 that you have announced and have been approved. There's  
9 approvals required from, for example, NERC in order to  
10 remove a power plant, and/or FERC, or for states.

11 And the non-firm are things that are  
12 coming out of the model. So again, it's not an input  
13 it's an output and -- and therefore it hasn't been  
14 approved by any regulatory authority.

15 MR. BYRON WILLIAMS: Okay. Thank you for  
16 that. Just a last couple of questions on pages 18 and  
17 19. You'll -- you'll agree with me that if -- if we look  
18 for -- to these various forecasts, there's neither a --  
19 dates provided or any footnote or -- or Internet link to  
20 these forecasts -- would that be fair, sir, in -- in  
21 terms of this presentation?

22 I don't mean that as a criticism, I just --  
23 - you'll confirm that?

24 MR. JUDAH ROSE: Yes. I mean, I -- I  
25 have all of the documents that are public. Many of these

1 are public documents that are available. For example,  
2 the CRA forecast is public. Most of these are public;  
3 it's just that the ICF Q3 and Q4 are for subscribers and  
4 are not public. But again, the EEI information was made  
5 public ten (10) days ago, approximately.

6 MR. BYRON WILLIAMS: And I wonder if you  
7 would agree just for -- to -- because I think it would  
8 help in understanding the table, to provide the dates for  
9 -- certainly by way of undertaking, the forecasts and  
10 also to the extent that documents are public, the -- a --  
11 a link or a footnote identifying where they might be  
12 found, sir?

13 MR. JUDAH ROSE: That's fine, and I  
14 believe I can do that today. I could actually provide  
15 the documents. And -- but I would just say by general  
16 explana -- almost all of this material was published  
17 since October of 2010.

18 MR. BYRON WILLIAMS: Thank -- thank you  
19 for that. And I think we can call that an undertaking,  
20 correct?

21 MS. PATTI RAMAGE: Yes.

22

23 --- UNDERTAKING NO. 64: ICF to provide the dates for  
24 the forecasts and a link or a  
25 footnote identifying where



1 gigawatts of new CCS coal being put on line by that --  
2 that time.

3 Would that be fair, sir?

4 MR. JUDAH ROSE: Yes.

5 MR. BYRON WILLIAMS: And -- and it would  
6 be fair to say, certainly, at the time of the estimate  
7 there was significant un -- uncertainty associated with  
8 CCS equipped coal in terms of, to name a few, the  
9 regulatory, legal and liability fronts in -- in addition  
10 to concerns about high cost.

11 Would that be fair, sir?

12 MR. JUDAH ROSE: Yes, and those concerns  
13 have increased through today.

14 MR. BYRON WILLIAMS: That's certainly  
15 where I was going, sir.

16 And certainly in your estimate here today  
17 -- or, excuse me, on page 27 -- at that point in time  
18 being October 2009, you were suggesting that coal  
19 additions would stall through 2020 when -- at which time  
20 more efficient coal plants become economic to build and  
21 run with carbon capture and storage, correct?

22 MR. JUDAH ROSE: Yes, that's what it  
23 says.

24 MR. BYRON WILLIAMS: And at a high level,  
25 I wonder if you can outline how, if at all, the views of

1 ICF have changed, first of all in terms of -- of the  
2 timing of when more efficient coal plants become economic  
3 to build and run with CCS.

4 MR. JUDAH ROSE: A couple things. One  
5 (1) is, you know, this morning I had an email where, you  
6 know, the idea of it becoming available somewhere in the  
7 2025 to 2030 range is something that seems reasonable to  
8 specialists.

9 The thing to understand is that there is  
10 no carbon capture sequestration on a -- on the utility  
11 scale anywhere in the world, and so it's a -- a  
12 technology that does not yet exist in a commercial scale  
13 application in the power industry. And therefore the  
14 direct control of CO2 is substantially more difficult  
15 than all other direct pollution control equipment  
16 installation requirements that have ever been considered,  
17 and that's related to fundamental chemistry.

18 The other thing is, is that, and I eluded  
19 to this, a concern is on cost. We talked about --  
20 yesterday a little bit about the costs of hydro plants.  
21 There has been a general escalation in capital investment  
22 costs across a number of areas, and one (1) of the  
23 disappointing things related to CCS is the costs of the  
24 one (1) IGCC plant, integrated gasification combined  
25 cycle coal power plant, that will -- that was -- has the

1 design that would make it easiest to put the CCS on for a  
2 new plant. The cost over -- over that has been very,  
3 very high, higher than ex -- anyone expected, and so that  
4 has lead to the view that the cost might be even higher  
5 for this than -- than anticipated.

6 So there has been a general increase  
7 through the years of capital costs of -- across the  
8 board, including for the competitors, and that has lead  
9 us to be concerned that the CCS might be too expensive to  
10 -- now.

11 And then there's -- lastly, as you  
12 indicated, the legal issues of who is responsible for the  
13 CO2 that goes in the ground for monitoring it, et cetera,  
14 the liability, the Clean Water Act implications of it, et  
15 cetera, have not been resolved, and accordingly, no one  
16 can undertake CCS as -- just as a general liability  
17 matter.

18 MR. BYRON WILLIAMS: Timing-wise, it  
19 would be fair to say that rather than looking out 2020,  
20 you're -- you're likely to be looking out to the middle  
21 part of that decade, being 2025, or beyond.

22 Would that be fair, sir?

23 MR. JUDAH ROSE: Yes, and anyone that was  
24 -- has -- looks at this as an option would be, I think,  
25 concerned that it wouldn't not -- be le -- less realistic

1 now than it was at that time.

2 MR. BYRON WILLIAMS: Thank you for that.  
3 Just a couple more questions on this area. I'm going to  
4 ask you to turn back to your February report, page 14,  
5 Hydro Exhibit 55.

6

7 (BRIEF PAUSE)

8

9 MR. BYRON WILLIAMS: That's page 14. And  
10 I just have a couple of short snappers on that. Page 14  
11 presents estimates of Henry Hub natural -- excuse me for  
12 one (1) second.

13

14 (BRIEF PAUSE)

15

16 MR. BYRON WILLIAMS: I meant to go to  
17 page 50, and I apologize for that. Thank you, Mr. Mayer.  
18 Page 15 presents forecasts of Henry Hub natural gas  
19 prices, both from October 2010 and February 2009.

20 Would that be fair, sir?

21 MR. JUDAH ROSE: Yes.

22 MR. BYRON WILLIAMS: And can you  
23 indicate, at a high level, how often does ICF prepare the  
24 forecasts of Henry Hub natural gas prices: monthly, semi  
25 -- semi-annually?

1                   How often would it be, sir?

2                   MR. JUDAH ROSE:    I would say quarterly.

3                   MR. BYRON WILLIAMS:   So would the  
4 February 2009 estimates presented in this table be the  
5 ones that underlaid the September 2009 report from ICF to  
6 Manitoba Hydro?

7

8   (BRIEF PAUSE)

9

10                   MR. JUDAH ROSE:    The reason I'm  
11 hesitating is I don't believe that we provided forecasts  
12 in the September 2009.  So if there's a specific  
13 reference --

14                   MR. BYRON WILLIAMS:   I don't have one,  
15 sir.  I'm assuming, though, that these forecasts would  
16 have underlaid your analysis of the marketplace, correct?

17                   MR. JUDAH ROSE:    Yes, it -- it wasn't  
18 exactly this one.  It was one I think a -- a little bit  
19 later, but what happened is is that we didn't have a  
20 large movement until after we completed the report, and  
21 so it's really where the major movement was was more  
22 recently in 2010.

23                   MR. BYRON WILLIAMS:   So your evidence is  
24 that, while that there's -- in terms of the most recent  
25 available information to you at the time you prepared

1 your September 2009 report, it would not be materially  
2 different from the February 2009 analysis.

3 Is that your evidence?

4 MR. JUDAH ROSE: Right. I -- no, we got  
5 an actual engagement agreement at the end of April 2009,  
6 early May, and I was here visiting -- I think we talked  
7 about this yesterday -- subsequent to that, and -- and  
8 therefore it was in the second quarter of 2009 that we  
9 were conducting a lot of our analysis, but the second  
10 quarter result wasn't finished until later in the second  
11 quarter, and -- and my recollection was that it was not  
12 significantly different. Really, what -- where the  
13 movement occurred was more recently, as represented by  
14 the October 2010 numbers here and the ones that I'd  
15 passed out this morning.

16 MR. BYRON WILLIAMS: Okay. Thank you for  
17 that. Again, just a few quick questions to finish up  
18 this area. Turning to page -- I better make sure of my --  
19 - turning to page 17 of the --

20 THE CHAIRPERSON: Just -- Mr. Williams,  
21 just one (1) second while you're on page 15 and the new  
22 Exhibit 60.

23 Mr. Rose, I -- I guess it would come as no  
24 surprise that the nominal price, Henry Hub in your  
25 forecast and your Exhibit Number 60, when you get out

1 past -- from about 2017 and -- and on, would bear no  
2 direct relationship to the future prices on NYMEX, would  
3 they?

4 MR. JUDAH ROSE: The -- there's no  
5 necessary relationship. They're an output of the model,  
6 and I -- sitting here, I can't say exactly what the  
7 relationship would be if I put them side to side. I  
8 don't know that, but there's no -- they're not coming  
9 from NYMEX, they're coming from the supply-and-demand  
10 model.

11 THE CHAIRPERSON: Yeah, so there wouldn't  
12 be a -- a surprise if -- if the NYMEX prices were  
13 significantly lower than the forecasts in nominal dollars  
14 that you have here. That shouldn't come as any surprise,  
15 given we -- I think the other day we talked about the  
16 degree of liquidity in the market as you go further out.

17 MR. JUDAH ROSE: I think that that's  
18 right, but even a liquid market might not necessarily  
19 agree with our forecast, and -- and so I think, you know,  
20 this is an area where there is a disagreement, I think,  
21 generally, in my experience with -- in the financial  
22 community. When I go to Wall Street, they're -- they  
23 think that the gas prices are not going to be as high as  
24 we think they are.

25 So we're -- we're basically around ten

1 dollars (\$10) by the time, I think, Conawapa would come  
2 online, nominal dollars, and I don't believe that --  
3 usually the financial community is more interested in the  
4 earlier years, but there -- but there is a divergence  
5 that begins to emerge between our fundamentals-based  
6 assessment and what I think is current in the financial  
7 community.

8 THE CHAIRPERSON: Thank you, sir.

9 Mr. Williams...?

10 MR. BYRON WILLIAMS: Thank you.

11

12 CONTINUED BY MR. BYRON WILLIAMS:

13 MR. BYRON WILLIAMS: Again, just  
14 directing your attention to page 17 of Exhibit Manitoba  
15 Hydro 55, the paragraph appearing below the table, the  
16 first sentence, ICF attributes its lowering of the  
17 forecast of Co2 emissions due to political developments,  
18 correct?

19 MR. JUDAH ROSE: Yes, sir.

20 MR. BYRON WILLIAMS: And obviously you  
21 used the word "plural" -- or "developments." You -- you  
22 there's an S at the end of it. Just -- just at a high  
23 level, one -- presumably one of the key political de --  
24 developments would have been the US midterm elections and  
25 the change in the voting balance in the House of

1 Representatives.

2 Would that be fair?

3 MR. JUDAH ROSE: Yes, sir.

4 MR. BYRON WILLIAMS: And a second would  
5 have been the -- I don't know if "death" is the right  
6 word, but the -- on the senate floor of the American  
7 Clean Energy and Security Act, or its -- or the -- the  
8 announcement by the senate in July of 2010 that it was  
9 not considering climate-change legislation before the end  
10 of the term. That would be another political  
11 development, sir?

12 MR. JUDAH ROSE: Yes.

13 MR. BYRON WILLIAMS: And I -- I think  
14 you've been quite clear in your evidence over the last  
15 two (2) days, that underlying these political  
16 developments is an economic development with massive  
17 political ramifications, namely, in the US, an economic  
18 trough, which you've characterized, I believe, as a one  
19 (1) in seventy (70) year event.

20 Would that be fair?

21 MR. JUDAH ROSE: Yes, the -- the  
22 recession was a one (1) in seventy (70) year event, and  
23 it is related to the things we're talking about.

24 MR. BYRON WILLIAMS: And you don't need  
25 to chastize me about being an optimist or a pe --

1 pessimist or worried about where we are. Is a  
2 consequence though of these political developments and  
3 looking to the year 2018, would it be fair to say that in  
4 that year your expectation of the CO2 emission allowance  
5 prices is between 40 percent and 60 percent lower

6 Would that be fair?

7 MR. JUDAH ROSE: Yes.

8 MR. BYRON WILLIAMS: And it would also be  
9 fair to say that the magnitude and timing of any CO2  
10 emission allowance or tax will be primarily driven by the  
11 outcome of the US political legislative process.

12 Would that be fair?

13 MR. JUDAH ROSE: Yes, and again I'm not a  
14 lawyer, but I do want to emphasize that there's also this  
15 legal administrative process that goes in the -- in the  
16 absence of additional legislation, it'll -- it has its  
17 own dynamic related to the interaction between the  
18 agencies and the courts.

19 MR. BYRON WILLIAMS: And I appreciate  
20 that. But you don't disagree that the -- where the --  
21 the results ultimately come, to a large degree, will be a  
22 result of the government and political process rather  
23 than economic process?

24 MR. JUDAH ROSE: Yes, I -- I think it's -  
25 - it's fair that it's -- there's some sort of government

1 political, legal process that's a big deal and that's  
2 involved in -- in determining the regulations.

3 MR. BYRON WILLIAMS: Recognizing your  
4 firm's expertise in energy economics, would it be fair to  
5 say that you would tend to have less confidence in your  
6 political predictions as compared to your economic  
7 prognostications?

8 MR. JUDAH ROSE: You know, I think that  
9 that's fair. That is, if someone said for a given set of  
10 assumptions what outcome would you predict, we would  
11 feel, I think, more comfortable, for example, with the  
12 output of the model. And I think there's no doubt that,  
13 you know, the political processes are -- are difficult to  
14 predict.

15 But, again, I think that -- I think it's  
16 easy to underestimate the degree of complexity that's  
17 required to be mastered in order to have an opinion on  
18 the likely outcome of environmental regulations. Not  
19 that, therefore, that knowledge is a panacea, but just  
20 knowing that there's a -- there's different court orders,  
21 there's different rules that are in place, and what the  
22 consequences of those rules are does provide, I think,  
23 you know, insight that is useful to assessing likely  
24 outcomes.

25 MR. BYRON WILLIAMS: And let me be clear,

1 Mr. Rose, I'm not challenging that. But your -- when  
2 push comes to shove, you -- you have -- would tend to  
3 have more confidence in your economic predictions than  
4 your assumptions flowing from a primary political  
5 governmental process?

6 MR. JUDAH ROSE: I think that's fair.

7 MR. BYRON WILLIAMS: In terms of --  
8 again, still on page 17, the previous forecast doesn't  
9 have a date attached to it. I think you might have  
10 referenced it but I forgot to take note of it.

11 When would this date -- this previous  
12 forecast have dated to?

13 MR. JUDAH ROSE: This has been  
14 approximately our forecast since 2009. I don't have the  
15 exact date in 2009, and -- and I think it was even before  
16 that. There was a period of time in which we had a  
17 forecast that was different, that was maybe from the  
18 period -- significantly different in the period '08, but  
19 in the period '09 and '10 it didn't move very much.

20 MR. BYRON WILLIAMS: And the current pro -  
21 - pro -- estimate or forecast would have been developed  
22 on or about when? Just roughly, sir.

23 MR. JUDAH ROSE: It's still in  
24 development, so I would say it's the best cut that I  
25 could give to the commissioners and as of the time I

1 wrote the document which was, you know, rec -- very  
2 recently.

3 MR. BYRON WILLIAMS: Mr. Chairman, I can  
4 probably just finish this area in about five (5) minutes  
5 and then perhaps that might be a good time for a lunch  
6 break.

7 Turning to your September 2009 report and  
8 specifically page 45 of that report. So that's Appendix  
9 12.2, the big -- the big report. And just -- just under  
10 section 2.83, the second paragraph, certainly there's a  
11 suggestion that:

12 "Potential new CO2 regulations creates  
13 significant upside for wholesale power  
14 prices."

15 You see that statement, sir?

16 MR. JUDAH ROSE: Yes, I do.

17 MR. BYRON WILLIAMS: And at that time you  
18 were using it as an example -- the impact of a twenty  
19 dollar (\$20) tax on CO2 emissions, correct?

20 MR. JUDAH ROSE: Yes, that's the example  
21 that I was using.

22 MR. BYRON WILLIAMS: Would it be fair to  
23 say that within the period moving out till 2018 at least,  
24 that the likelihood of a significant upside for wholesale  
25 power prices related to a CO2 allowance cost or tax is --

1 is somewhat less likely, sir?

2 MR. JUDAH ROSE: Is -- the question is:  
3 Today -- is it less likely today than it was when I wrote  
4 the report? Is that the question?

5 MR. BYRON WILLIAMS: Yes, in terms of a  
6 si -- creating a significant upside for wholesale power  
7 prices.

8 MR. JUDAH ROSE: I think that's true.  
9 And, of course, the -- some of these other regulations,  
10 however, become more -- more likely more stringent and  
11 create a different but related upside.

12 MR. BYRON WILLIAMS: Still -- just  
13 flipping back, and I apologize for this, you still  
14 probably I hope have page 17 of your report from February  
15 2011 in front of you, sir, do you?

16 MR. JUDAH ROSE: Yes.

17 MR. BYRON WILLIAMS: And you're talking  
18 at the bottom of this report about the new coal plant  
19 option essentially being eliminated.

20 Do you see that, sir?

21 MR. JUDAH ROSE: Yes.

22 MR. BYRON WILLIAMS: And earlier today I  
23 -- I think you used slightly different language, you said  
24 "eliminated or a much more difficult option."

25 Do you recall that, sir?

1 MR. JUDAH ROSE: Yes.

2 MR. BYRON WILLIAMS: And just -- just to  
3 -- to clarify. Is new coal essentially eliminated  
4 looking out to the future, in your view, or currently  
5 just a more -- much more difficult option?

6 MR. JUDAH ROSE: It's -- it's just a --  
7 it's a much more difficult option. Right now, you cannot  
8 get a new coal power plant permitted and the reason for  
9 that is the administration has -- won't -- won't allow  
10 that. And, of course, the administration could change  
11 and then I think it would be much more difficult rather  
12 than impossible.

13 MR. BYRON WILLIAMS: So when one sees the  
14 word "eliminates an option" you might moderate that  
15 suggestion and -- and say much more -- much more  
16 difficult?

17 MR. JUDAH ROSE: Yeah, I think that's  
18 fair, and I apologize for any confusion on that, but I  
19 think today -- sitting here today, if you went into a  
20 regulator and say, The reason -- the way we're going to  
21 be able to control the volatility is to permit a new  
22 power plant, a coal power plant and build it, I just  
23 don't think that that would be anywhere near as -- as  
24 credible -- it wouldn't be credible, Number 1.

25 Number 2 is is that it might be credible

1 in the future if there's a change in the administration,  
2 but it still would be difficult because of the high  
3 capital costs of that option, and the various different  
4 regulatory uncertainties that face coal.

5 MR. BYRON WILLIAMS: Okay. Thank you  
6 very much.

7 Mr. Chairman, I think that covers well  
8 over a half, perhaps 60 percent of my cross. I would  
9 hope I could finish in somewhere between in an hour and  
10 an hour and fifteen (15) minutes this afternoon. I'm  
11 prepared to come back sooner, if that would suit the --

12 THE CHAIRPERSON: Okay.

13 MR. BYRON WILLIAMS: -- pleasure of the  
14 Board. I'll leave that to --

15 THE CHAIRPERSON: We'll let's come back  
16 at one o'clock then. Thank you.

17

18 --- Upon recessing at 11:56 a.m.

19 --- Upon resuming at 1:03 p.m.

20

21 THE CHAIRPERSON: Okay, Mr. Williams.

22

23 CONTINUED BY MR. BYRON WILLIAMS:

24 MR. BYRON WILLIAMS: Yes, thank you. Mr.  
25 Rose, just one (1) question of cleanup from this morning

1 first of all. Directing your attention back to page 19  
2 of Manitoba Hydro Exhibit 55.

3

4 (BRIEF PAUSE)

5

6 MR. JUDAH ROSE: I'm just trying to find  
7 my glasses. All right, I don't see them here.

8 MR. BYRON WILLIAMS: You can borrow mine  
9 if you'd like, Mr. Rose.

10 MR. JUDAH ROSE: I got them. I got them,  
11 sorry. Sorry about that. I mean, I -- I think I could  
12 do it without the glasses, but I cannot be 100 percent  
13 sure. Okay. I'm sorry.

14 MR. BYRON WILLIAMS: And I just wanted to  
15 -- with this discussion on the previous page in terms of  
16 the EE -- Edison Institute Scenario 1, and Edi -- Edis --  
17 Edison -- excuse me, Edison Electrical Institute Scenario  
18 2.

19 And, but as I understand it, the Scenario  
20 1 has no CO<sub>2</sub>, whereas Scenario 2 has CO -- an estimate of  
21 CO<sub>2</sub> allowance based upon the previous estimate of ICF.

22 Is that correct, sir?

23 MR. JUDAH ROSE: Close, but it -- it has  
24 a CO<sub>2</sub> estimate in Scenario 2. It's not an ICF estimate.  
25 I don't have the number here. I don't believe it's

1 substantially different, but I just -- I just --

2 MR. BYRON WILLIAMS: Yeah --

3 MR. JUDAH ROSE: -- I don't have that  
4 here.

5 MR. BYRON WILLIAMS: -- and thank --  
6 thank you for clarif -- or, I apologize for my absence of  
7 precision.

8 What I believe we agreed upon with the  
9 previous page, that if we adjusted the Edison Electric  
10 Institute Scenario 2, putting in more current CO2  
11 emission allowance estimates, the number which would  
12 appear would be somewhere between -- would be less than  
13 twenty-six (26), although more than fifteen (15), would  
14 that be fair, in terms of gigawatts?

15 MR. JUDAH ROSE: Yes.

16 MR. BYRON WILLIAMS: And based upon the  
17 rough calculation that you did in terms of the previous-  
18 page scenario, it would be closer to fifteen (15) than to  
19 twenty-six (26) gigawatts.

20 Would that be fair?

21 MR. JUDAH ROSE: Yes, with the same  
22 caveats I indicated earlier, which is we're still  
23 awaiting those runs.

24 MR. BYRON WILLIAMS: Thank you. Now, if  
25 you could, please keep that document at hand, but turn to

1 -- around page 57, if you would, that document being your  
2 February 2011 oral evidence -- or direct testimony.

3 And second, if you could also bring to  
4 hand the September '09 report from Appendix 12.2, and  
5 we're going to start at page 8 for just a second. Page  
6 8, yes.

7

8

(BRIEF PAUSE)

9

10 MR. JUDAH ROSE: Okay.

11 MR. BYRON WILLIAMS: Yeah, and you can  
12 leave page 19, Mr. Rose, of that previous document. I --  
13 I'm -- I'm moving well on up to page 57.

14 MR. JUDAH ROSE: I have it.

15 MR. BYRON WILLIAMS: Okay. And -- and  
16 just very quickly again, not wanting to tiptoe too much  
17 in terms of where Mr. Peters went, but first of all, your  
18 September '09 report at page 8, it's essentially your --  
19 excuse me.

20 It's your evidence, as set out at page 8,  
21 that -- referring you to the first paragraph, that the  
22 mix between short-term and other contracts in terms of  
23 MPI's plans was essentially that MPI was planning to sell  
24 a bit more than half of its exports under short-term  
25 contracts. That was your...

1 (BRIEF PAUSE)

2

3 MR. BYRON WILLIAMS: Manitoba Hydro was  
4 planning to -- to sell a bit more than half of its  
5 exports under -- exports under short-term contracts.

6 Would that be fair?

7 MR. JUDAH ROSE: Yes, sir.

8 MR. BYRON WILLIAMS: And also, in -- even  
9 in one of its proposed long-term contracts, its  
10 expectation was that about one half of the sales would be  
11 priced at spot-market conditions.

12 Is that fair?

13 MR. JUDAH ROSE: Yes. There was a -- an  
14 adjustment clause to the price that had in there the  
15 market price.

16 MR. BYRON WILLIAMS: So that was a yes?

17 MR. JUDAH ROSE: Yes, as I -- yes, it --  
18 the market price does affect the price of the contract  
19 out in the future.

20 MR. BYRON WILLIAMS: And given that one  
21 half the sales are priced at spot-market conditions, it  
22 would significantly affect those prices, correct?

23 MR. JUDAH ROSE: It's more that the price  
24 is adjusted based on market conditions. It's not that  
25 the price is at market conditions.

1                   MR. BYRON WILLIAMS:   Thank you for that.  
2   That's helpful.  I want to turn you to the subject of  
3   what, if anything, has changed in the circumstances of  
4   Manitoba Hydro, not Manitoba Public Insurance, since the  
5   2003/'04 drought.  And you've already got page 57 of the  
6   2011 evidence at hand.  In terms of the 2009 evidence,  
7   Appendix 12.2, perhaps you could turn to page 15 for a  
8   minute, Mr. Rose, please.

9                   MR. JUDAH ROSE:    Okay.

10                  MR. BYRON WILLIAMS:   In terms of the  
11   first full page -- excuse me, the first full paragraph on  
12   page 15, you discussed the '03/'04 drought, and towards  
13   the bottom of that paragraph you discuss why this was --  
14   why, in part, the losses in '03/'04 were more extreme  
15   when compared to the losses of the last drought in --  
16   previous drought period in 1989.

17                  Do you see that, sir?

18                  MR. JUDAH ROSE:    Yes, I do.

19                  MR. BYRON WILLIAMS:   And without asking  
20   you to elaborate at this point in time, it was your  
21   evidence that the severity of the financial consequences  
22   of the drought for Hydro in 2003 as compared to the  
23   drought ending in 1989 was driven, in part, by increases  
24   in the company's long-term fixed-price export commitments  
25   between '89 and '03.

1                   Would that be fair?

2                   MR. JUDAH ROSE:    Yes, in part.

3                   MR. BYRON WILLIAMS:   And just again to --  
4 to emphasize that point, I wonder if I could direct your  
5 attention to footnote 9 on that same page.  And I -- I  
6 take it you would agree that Hydro's long-term agreements  
7 in 20 -- in 2003 at 6,100 gigawatt hours were roughly  
8 fourteen (14) time -- times larger than its long-term  
9 agreements in 1989 at 423 gigawatt hours.

10                   Is that fair?

11                   MR. JUDAH ROSE:    Yes, I see that.

12                   MR. BYRON WILLIAMS:   So as we look at  
13 how, if at all, matters have changed since '03/'04, you'd  
14 agree certainly that important consideration has to be  
15 given to the terms of any long-term export commitments,  
16 correct?

17                   MR. JUDAH ROSE:    Yes, you -- you want to  
18 look at the totality of the evidence, including the --  
19 the terms and conditions under which the sales were made.

20                   MR. BYRON WILLIAMS:   And I -- I really  
21 think you do not need to turn here, but another issue  
22 experienced by Manitoba Hydro in the '03/'04 drought was  
23 connected to shortage pricing in which sellers extracted  
24 a premium once they became aware of the Corporation's  
25 need for power.

1                   Would that be fair, sir? I can give you a  
2 reference if you want. It's page 59 of your evidence.  
3 The first full paragraph, sir.

4                   MR. JUDAH ROSE: Yes, I think in that  
5 case I was referring to -- I had in mind transmission,  
6 but -- which is an element of power pricing.

7                   MR. BYRON WILLIAMS: That's helpful. But  
8 you'll agree that when we look at the circumstances of  
9 Manitoba Hydro in '03/'04 one of the factors that  
10 exacerbated or worsened the impact of -- of the drought  
11 was shortage pi -- pricing which you're suggesting was  
12 related to transmission pricing.

13                   Is that fair, sir?

14                   MR. JUDAH ROSE: Yes, and that's one (1)  
15 of the issues that the new terms and conditions  
16 ameliorate.

17                   MR. BYRON WILLIAMS: And we'll get to --  
18 get to that in -- in -- right away, in fact. At a big  
19 picture, Mr. Rose, in terms of Manitoba Pub -- excuse me,  
20 Manitoba Hydro and the Public Utilities Board preparing  
21 for and res -- responding to a drought, you would agree  
22 that one (1) central concern both of the Corporation and  
23 its regulator has to be reliability, the ability of Hydro  
24 to serve its domestic customers and others to -- to whom  
25 it has a contractual obligation to serve.

1                   That would be fair; the big picture?

2                   MR. JUDAH ROSE:    You know, from a big  
3 picture perspective, reliability's very important.

4                   MR. BYRON WILLIAMS:   And the other big  
5 picture perspective in terms of preparing for and  
6 mitigating the impact of a significant drought is  
7 mitigating the financial implications, the negative  
8 financial implications which may fall out of a  
9 circumstance of that extremity.

10                  Fair enough?

11                  MR. JUDAH ROSE:    Yes, the first priority  
12 is -- is reliability in terms of keeping the lights on,  
13 and the second priority is financial.

14                  MR. BYRON WILLIAMS:   And I'm going to ask  
15 you to assist me, that as we -- as we go through some of  
16 the factors that may have changed since '03/'04, you keep  
17 those two (2) central concerns in mind, those being  
18 reliability and also mitigating financial implications,  
19 and -- and assist my clients in understanding the  
20 significance of some of the changes, if you would, sir.

21                  Would you be prepared to do that?

22                  MR. JUDAH ROSE:    Yes.

23                  MR. BYRON WILLIAMS:   Turning to your  
24 February 2011 report page 57, you outline on this page a  
25 number of additional tools that Manitoba Hydro has in its

1 tool ki -- kit to deal with droughts in the future, as  
2 compared to '03/'04; without asking for any more, that's  
3 correct?

4 MR. JUDAH ROSE: Yes.

5 MR. BYRON WILLIAMS: And again, without  
6 asking you to elaborate at this point in time, one (1)  
7 tool is -- or one (1) changed circumstance is the change  
8 from a largely bilateral market to a significantly more  
9 liquid marketplace.

10 Would that be fair?

11 MR. JUDAH ROSE: Yes, there wa -- MISO  
12 now runs a energy market that is the basis for a more  
13 liquid market.

14 MR. BYRON WILLIAMS: And I'll get you to  
15 elaborate on the significance of that in just a second.  
16 A second change though is the re -- rego -- re --  
17 renegotiation of certain contracts so that financial  
18 sediment -- settlement is now possible.

19 Is that correct?

20 MR. JUDAH ROSE: Yes.

21 MR. BYRON WILLIAMS: A third, perhaps  
22 under that same hyphen, is that Manitoba Hydro has  
23 brought -- bought some additional transmission rates.

24 Is that fair?

25 MR. JUDAH ROSE: Yes, that is in the

1 proposed arrangements they have greater ability for  
2 financial settlement and for -- and access to  
3 transmission capabilities.

4 MR. BYRON WILLIAMS: And -- and I'll come  
5 to an elaboration on that in a second. And a fourth of -  
6 - of course, that you set out on this page is that future  
7 contract term sheets with two (2) of the potential  
8 contracting parties would be based on dependable hydro as  
9 opposed to dependable system energy.

10 Is that fair?

11 MR. JUDAH ROSE: Yes.

12 MR. BYRON WILLIAMS: If I could, you --  
13 you set out in your evidence a table at page 59 of this  
14 February 2011 report that I'd appreciate your assistance  
15 with.

16 Do you have that, sir?

17 MR. JUDAH ROSE: Yes.

18 MR. BYRON WILLIAMS: I want to direct  
19 your attention on this table, and essentially what this  
20 table contrasts is 2003 versus 2010. Is that roughly  
21 what it attempts to do here, sir?

22 MR. JUDAH ROSE: Yes, roughly.

23 MR. BYRON WILLIAMS: And directing your  
24 attention to -- towards the bottom of the -- the table,  
25 you see the heading "US firm import transmission,"

1 correct?

2 MR. JUDAH ROSE: Yes.

3 MR. BYRON WILLIAMS: And you make the  
4 point that in 2003 the import -- summer import and winter  
5 import transmission were not Manitoba Hydro controlled,  
6 correct?

7 MR. JUDAH ROSE: Yes, I -- that's  
8 correct.

9 MR. BYRON WILLIAMS: In 2010 you make the  
10 point that the summer import transmission is mostly  
11 Hydro- controlled with the winter being all Manitoba  
12 Hydro controlled, correct?

13 MR. JUDAH ROSE: Yes.

14 MR. BYRON WILLIAMS: And if I went -- and  
15 you don't need to, but if I went back two (2) pages, your  
16 evidence suggests that this is a significant improvement,  
17 correct?

18 MR. JUDAH ROSE: It's an improvement and  
19 it's -- and it's -- I guess you can call it significant.  
20 I -- I felt it was significant enough to call to the  
21 Board's attention.

22 MR. BYRON WILLIAMS: And you described it  
23 at page 57 as a significant improvement.

24 Do you recall that?

25 MR. JUDAH ROSE: It's significant.

1                   MR. BYRON WILLIAMS:   Mr. Rose, I wonder  
2 if you can elaborate on -- on why it's significant.

3                   MR. JUDAH ROSE:   Well, I think we -- you  
4 know we talked over the last few days on the importance  
5 of transmission generally, the -- the complexities of  
6 transmission as it relates to the fact that there are  
7 implications about the -- what you do with the contracts  
8 in terms of what you do in terms of transmission.  And I  
9 think what you want to avoid is a situation where (a) you  
10 have too little physical transmission but you also want  
11 to avoid a situation in which people can, if you will,  
12 take advantage of your need for transmission by raising  
13 the prices.

14                   And so by securing the transmission in  
15 advance before you have the real need for it, the price  
16 is going to be -- it's likely to be lower and you're less  
17 exposed to the financial consequences and/or potentially  
18 even non-financial consequences.

19                   MR. BYRON WILLIAMS:   And just so I  
20 understand your answer.  From the relia -- reliability  
21 perspective when Manitoba Hydro controls the  
22 transmission, or mostly controls the transmission at  
23 least, it gives some more certainty in -- in terms of the  
24 ability to import.

25                   Is that correct?

1 MR. JUDAH ROSE: Yes, both with respect  
2 to the physical ability and also the financial  
3 consequences.

4 MR. BYRON WILLIAMS: And moving to the  
5 financial consequences. When Hydro controls it -- it  
6 suggests that the -- as opposed to '03/'04 and the  
7 shortage pricing situation that that might be avoided.

8 Is that what you're saying, sir?

9 MR. JUDAH ROSE: Yes.

10 MR. BYRON WILLIAMS: Staying at page 59  
11 of -- of your evidence, moving up a couple of lines to  
12 the word "market." You -- you note that in '03 it was  
13 largely a bilateral market, correct?

14 MR. JUDAH ROSE: Yes.

15 MR. BYRON WILLIAMS: And in 2010 it's a  
16 significantly more open and liquid market.

17 Is that correct?

18 MR. JUDAH ROSE: Yes.

19 MR. BYRON WILLIAMS: And we'll talk about  
20 hedging in a moment, and I may have misunderstood your  
21 evidence, but does the openness of the market also  
22 provide any benefits in terms of shortage pricing in --  
23 in this -- in this? Or when you were referring to  
24 shortage pricing before was it almost exclusively  
25 transmission?

1                   MR. JUDAH ROSE:    It was transmission that  
2 I was referring to but I think this is an important  
3 linkage to understand that the existence of MISO is  
4 facilitating the creation of the necessary transmission  
5 links because by the existence of MISO and the associated  
6 FERC policies, it may be that the US transmission  
7 improvements would be socialized as opposed to paid for  
8 by the counterparties.

9                   That is, the same process that created the  
10 centralized marketplace, and therefore has increased the  
11 liquidity, is also now leading to the socialization on  
12 the US side of transmission upgrades, and therefore makes  
13 it easier for the counterparties to engage in the  
14 contracts with Manitoba Hydro.

15                  MR. BYRON WILLIAMS:   In terms of this  
16 open -- open, more liquid market, you'd agree that in a  
17 bilateral market Manitoba Hydro had a relatively more  
18 difficult time hedging except through counterparties?

19                  MR. JUDAH ROSE:    Yes, particularly when -  
20 - in a situation where there weren't that many bilateral  
21 counterparties available, and they knew that you were  
22 very much needing transmission capacity.

23                  MR. BYRON WILLIAMS:   And with the market  
24 significant more liquid and open, that provides  
25 opportunity for Hydro hedging with, perhaps not all

1 available, but more available financial instruments?

2 MR. JUDAH ROSE: Yes, and I -- I do think  
3 that -- while I haven't been emphasizing transmission,  
4 there are also, in terms of the commodity, there's  
5 greater liquidity in the -- in the marketplace, so you  
6 can sell your energy with assuredness, and that leads to  
7 greater participation and liquidity on the hedging  
8 instruments or the -- what they call the derivatives.  
9 The main market is more liquid, therefore you're likely  
10 to have more players and liquidity in the hedging  
11 instruments or the derivatives.

12 MR. BYRON WILLIAMS: And Mr. Rose, I'm  
13 pretty sure you don't need to turn here, but if you're  
14 looking for a reference it's page 22 of your September  
15 evidence. You really don't trust me. I hate to make you  
16 bounce back and forth. That's okay.

17 MR. JUDAH ROSE: I'm sorry. I'm sorry.  
18 I trust you, but I'm verifying.

19

20 (BRIEF PAUSE)

21

22 MR. BYRON WILLIAMS: And where I'm  
23 directing you is the last paragraph above Section 1.26.  
24 You talk about as -- as part of the Corporation's drought  
25 related financial plan that you should be looking at

1 additional test -- top four (4) lines, sir.

2 "Additional testing of short-term  
3 hedges such as power purchases and  
4 options."

5 And I wonder if you could explain to my --  
6 myself and to my clients the significance of -- of these,  
7 in -- in terms of mitigating the impact of a -- a  
8 drought, sir.

9 MR. JUDAH ROSE: Yes. Well, and the key  
10 idea here is is that you go -- are going into the  
11 drought, it's increasing the chance that you're going to  
12 need to purchase power, and you're exposed to the  
13 possibility that when you purchase it, and you don't want  
14 to purchase it all at once, you want to spread it out  
15 because at any point you could find out that you're not  
16 in a drought, is you want to protect yourself against the  
17 price flying up in addition.

18 It could happen through some event that's  
19 unrelated to your drought at -- and you want to protect  
20 yourself, an option -- a call option, for example, would  
21 protect you against the fly up.

22 Now, that's something that the Company  
23 undertook previously, but it's, I think, something that  
24 you want to always be testing it to see how much of that  
25 you should be doing, and what the optimal amount is, and

1 being able to communicate internally and externally while  
2 you're doing that.

3 MR. BYRON WILLIAMS: And your evidence  
4 would be that in the context of a more open market, this  
5 is a tool with significantly more potential for Manitoba  
6 than existed in the bilateral circumstances of the  
7 '03/'04 drought.

8 Would that be fair?

9 MR. JUDAH ROSE: It's -- it's better --  
10 there -- it's clearly a better situation because the more  
11 counterparties you have to those -- to those people that  
12 are writing the options, the more likely they'll be  
13 competitively priced.

14 MR. BYRON WILLIAMS: Moving up another  
15 line, you'll see the annual firm export contracts. Do  
16 you see that, sir? I'm -- I'm sorry, I'm redirecting  
17 your attention --

18 MR. JUDAH ROSE: All right --

19 MR. BYRON WILLIAMS: -- back to page 59.

20 MR. JUDAH ROSE: Okay. I see that.  
21 Annual firm export contracts, yes.

22 MR. BYRON WILLIAMS: And -- and the  
23 status quo in '03 was that buybacks were possible.

24 Do you see that, sir?

25 MR. JUDAH ROSE: Yes.

1                   MR. BYRON WILLIAMS:   And the change in --  
2   in 2010, you suggest, is that Manitoba Hydro's  
3   renegotiated contracts so that financial settlements are  
4   now possible, correct?

5                   MR. JUDAH ROSE:    Yes.

6                   MR. BYRON WILLIAMS:   And just to direct  
7   your attention back to page 57 for a -- a second, sir,  
8   two (2) -- two (2) pages back from there, Mr. Rose.

9                   MR. JUDAH ROSE:    Okay.

10                  MR. BYRON WILLIAMS:   You'll see when --  
11   excuse me.  You'll see that when you're discussing the  
12   possibility of financial settlement, you use some pretty  
13   long -- strong language, suggesting that Hydro would not  
14   be held hostage to contracts.

15                  Do you see that, sir?

16                  MR. JUDAH ROSE:    Yes.

17                  MR. BYRON WILLIAMS:   And what do you mean  
18   by that?

19                  MR. JUDAH ROSE:    The -- the more -- the  
20   greater extent you're relying sort of on a physical  
21   transaction with a limited number of parties, the -- the  
22   easier it is for the counterparty to take advantage of  
23   the situation.  And so the idea is that if you can just  
24   financially settle you don't necessarily have to arrange  
25   for the physical settlement of replacement power, you can

1 just -- it's -- it's basically like a liquidated damages  
2 type of provision as opposed to a -- you bought something  
3 and I've got to actually deliver it to you as opposed to  
4 make you whole for the difference between what it costs  
5 now and what you contracted it for.

6 MR. BYRON WILLIAMS: Okay. Thank you.  
7 At some point in time, Mr, Rose, I'm going to ask you to  
8 explain where the NS -- or, excuse me, I won't use the  
9 firm, but where the call option fits within all this, but  
10 perhaps we'll come to that in a -- in a couple of  
11 seconds.

12 We're still on page 57 for a second, and  
13 again you -- you note that future contract term sheets  
14 with two (2) parties would be based on dependable hydro,  
15 not dependable system energy.

16 You see that reference, sir?

17 MR. JUDAH ROSE: Yes.

18 MR. BYRON WILLIAMS: And I'm going to  
19 help -- ask you to help explain this just a bit more by  
20 turning back to page 50 and 51 of this same report, sir.

21 MR. JUDAH ROSE: Okay.

22 MR. BYRON WILLIAMS: As I understand what  
23 you're trying to say in terms of the significance of  
24 being sourced from dependable hydro versus dependable  
25 system resources, you're saying, first of all, that

1 sourcing for dependable hydro allows for weekend volume  
2 flexibility on two (2) of the key contracts, up to 29  
3 percent.

4 Is that right?

5 MR. JUDAH ROSE: Yes.

6 MR. BYRON WILLIAMS: And does that mean,  
7 in simple lawyer terms, that the -- that's -- there's a  
8 potential for that power to be converted from firm to  
9 non-firm?

10 MR. JUDAH ROSE: I think -- I think the  
11 key thing here is -- is that you just don't have to  
12 deliver it if it's adverse to your interest.

13 MR. BYRON WILLIAMS: And the second key  
14 point you make under this heading is that, in  
15 circumstances with a drought worse than the worst on  
16 record, there's absolute volume flexibility up to 100  
17 percent.

18 Is that right?

19 MR. JUDAH ROSE: Well, there's volume  
20 flexibility, but it -- and it is up to 100 percent, but I  
21 think it's -- there's -- there are some terms and  
22 conditions related to equal treatment of various  
23 different firm loads. But I think the critical idea here  
24 is is you don't have to deliver if you're in a really  
25 extreme drought situation, and that's explicit in the --

1 the contract.

2 MR. BYRON WILLIAMS: And not having to  
3 deliver in the extreme drought condition, it's identified  
4 here with reference to the WPS and MP term sheets. Am I  
5 correct in understanding that that also applies to the  
6 NSP situation or no, sir?

7 MR. JUDAH ROSE: No. The reason we're  
8 calling that WPS and MP is that the -- the term sheets  
9 are -- are specially -- especially explicit and flexible  
10 with respect to that provision in the WPS and MP term  
11 sheet.

12 MR. BYRON WILLIAMS: Okay, and then maybe  
13 you can turn to page 51 to explain some confusion. Well,  
14 I'm not sure anyone can explain my confusion, but you  
15 might -- might assist.

16 You'll agree with me -- this is fifty-one  
17 (51), page 51 of your evidence of -- of February 2011.  
18 Essentially, what I -- I thought this was presenting in  
19 the dark blue is the total proposed contract, including  
20 WPS, MP, and NSP.

21 Have I misunderstood that, sir?

22 MR. JUDAH ROSE: No, I believe that's --  
23 that's correct.

24 MR. BYRON WILLIAMS: And then the light  
25 blue is the total proposed contract with the potential to

1    redu -- have certain vo -- weekend volume flex --  
2    flexibility, as reflected in the WPS and MP term sheets,  
3    correct?

4                   MR. JUDAH ROSE:    Yes.

5                   MR. BYRON WILLIAMS:   The green identifies  
6    the volume flexibility associated with the combination of  
7    the WPS and MP weekend curtailment and the NSP call  
8    option then, correct?

9                   MR. JUDAH ROSE:    Yes.

10                  MR. BYRON WILLIAMS:   And the red, which -  
11   - which is at zero, suggests that in the -- the case of a  
12   worst drought scenario no deliveries are required.  But  
13   as I understand it, your evidence is that it only applies  
14   to WPS and MP; is that right?

15                  MR. JUDAH ROSE:    The -- the provisions  
16   are different between the contract and the -- the  
17   flexibility is greater in the WPS than the MP.

18                  MR. BYRON WILLIAMS:   So is that zero  
19   appropriate, sir?

20                  MR. JUDAH ROSE:    I -- I believe it is.

21                  MR. BYRON WILLIAMS:   But I shouldn't take  
22   it to suggest that it -- it means that there are no  
23   deliveries required under the NSP?

24

25                                       (BRIEF PAUSE)

1                   MR. JUDAH ROSE:    That there -- that there  
2 is under the NSP some flexibility, but it has financial  
3 co -- consequences related to the exercise of that call  
4 option.

5                   MR. BYRON WILLIAMS:   And I may have to  
6 seek more clarification from Mr. Cormie, or certainly  
7 you're welcome to if you want to alleviate my confusion  
8 right now. But is it -- is it -- are you still of the  
9 view that -- that zero is -- is appropriate?

10                  MR. JUDAH ROSE:    Again, I -- I think the  
11 difference between the two (2) contracts relates to the  
12 financial consequences of no -- of a drought worse than  
13 worst on record, and I believe that there are financial  
14 consequences -- con -- consequential differences. But  
15 having said that, I still think that the red is  
16 appropriate. And what I can do is maybe during a break  
17 we can doublecheck that.

18                  MR. BYRON WILLIAMS:   And -- and you're  
19 fine with that, and I -- it's probably my confusion, not  
20 yours. And I just want to make sure that my clients  
21 understand this.

22                                Would you undertake to do that, sir?

23

24

(BRIEF PAUSE)

25

1 MS. PATTI RAMAGE: Mr. Williams, can you  
2 repeat the undertaking, and we'll see --

3 MR. BYRON WILLIAMS: Well --

4 MS. PATTI RAMAGE: We might be able to  
5 give it to you right now if I hear it again.

6 MR. BYRON WILLIAMS: What I'm just  
7 seeking is clarification whether -- perhaps the best  
8 thing to do is we'll -- at the break we'll -- we'll discuss  
9 it. So let's scratch the word "undertaking" from the  
10 record and we'll agree to discuss this at the break.

11 MS. PATTI RAMAGE: For what it's worth,  
12 Mr. Williams, from the Manitoba Hydro end, that if it  
13 helps you to move along, the red line being at zero is --  
14 is correct.

15 MR. ROBERT MAYER: But you -- you --

16 MS. PATTI RAMAGE: But we can discuss it  
17 at the break to explain it.

18 MR. ROBERT MAYER: You might have more  
19 discussion than enough then because if -- if the -- if --  
20 how do you get a zero cost call option? We're talking  
21 about a call option here, aren't we?

22 MS. PATTI RAMAGE: You may not be talking  
23 about the call option to get to zero.

24 MR. JUDAH ROSE: The -- the vertical axis  
25 is gigawatt hours, it's not dollars.

1 MS. PATTI RAMAGE: Yeah.

2

3 CONTINUED BY MR. BYRON WILLIAMS:

4 MR. BYRON WILLIAMS: I'll move on but  
5 I'll just ask my friend Mr. Peters to remind me that I --  
6 that I -- to make sure I don't leave this.

7

8 (BRIEF PAUSE)

9

10 MR. BYRON WILLIAMS: Bottom line, Mr.  
11 Rose, is that Hydro, in your view, is decreasing its --  
12 its exposure to the risks of a drought by decreasing the  
13 firmness of some of the volume.

14 That -- that would be fair?

15 MR. JUDAH ROSE: Yes, under certain  
16 circumstances that's -- that's correct. And as a general  
17 matter, the company is taking steps to minimize the -- or  
18 reduce the exposure to extreme droughts.

19 MR. BYRON WILLIAMS: And as you compare  
20 the term-sheet commitments to existing contracts it would  
21 be your view that these comm -- commitments are  
22 inherently less risky than existing contracts, correct?

23 MR. JUDAH ROSE: Yes, they're -- they're  
24 more explicit and -- and clearer and help mitigate the  
25 exposure of the Company, yes.

1                   MR. BYRON WILLIAMS:   And in terms of  
2 mitigating exposure, would that be both on the  
3 reliability side and on the financial-risk side, sir?

4                   MR. JUDAH ROSE:    Yes, and in particular  
5 I'm thinking here also on the financial side.

6                   MR. BYRON WILLIAMS:   Did you say "in  
7 particular on the financial side," sir?

8                   MR. JUDAH ROSE:    Yes.  But I -- I think  
9 it does also potentially extend over onto the physical  
10 side.

11                   MR. BYRON WILLIAMS:   And in terms of on  
12 the financial side, and Mr. Peters may have attempted to  
13 ask this yesterday, have you or your gifted staff at ICF,  
14 made some effort to quantify the financial implications  
15 of this rede -- reduced exposure?

16                   MR. JUDAH ROSE:    No, we don't.  We  
17 haven't made an explicit calculation and it's -- it's a  
18 complicated endeavour to do so.

19                   MR. BYRON WILLIAMS:   It would be -- in  
20 your view -- I recognize you haven't performed the  
21 calculations, would it be significantly reduced financial  
22 exposure?

23                   MR. JUDAH ROSE:    Yes, I think it is  
24 significant, that's why I wanted to call it to -- to the  
25 attention.  You know, obviously one (1) of the

1 mathematical problems is what's the probability of a  
2 drought worse than the worst on record.

3 MR. BYRON WILLIAMS: Thank you for that.  
4 I want to turn your consideration to the question of  
5 whether Manitoba Hydro's quantification of the financial  
6 rel -- risk related to an extended drought is -- is  
7 reasonable, and I'd -- in terms of the February 2011  
8 evidence, perhaps you could turn to page 60?

9 MR. JUDAH ROSE: Okay.

10 MR. BYRON WILLIAMS: And in terms of your  
11 September 2009 evidence perhaps you could turn to page  
12 108, please.

13 And, Mr Chairman, if I might be excused  
14 for some water just for a second.

15 THE CHAIRPERSON: For sure.

16

17 (BRIEF PAUSE)

18

19 MR. BYRON WILLIAMS: Mr. Rose, I'll just  
20 wait till everyone is back at their spot.

21

22 (BRIEF PAUSE)

23

24 MR. BYRON WILLIAMS: Thank you for the  
25 break, Mr. Chairman.

1 CONTINUED BY MR. BYRON WILLIAMS:

2 MR. BYRON WILLIAMS: Mr. Rose, of course  
3 I've -- I've inadvertently mislead you. You probably  
4 want to have page 109 on hand instead of page 108. One  
5 (1) more page over.

6

7 (BRIEF PAUSE)

8

9 MR. BYRON WILLIAMS: Mr. Rose, just  
10 directing your attention to it for a couple seconds, to  
11 the quantification of the consequences of a five (5) year  
12 drought, certainly for the purposes of your evidence of  
13 September 2009, it's your understanding that the  
14 Corporation took a look at the financial consequences of  
15 an extended five (5) year drought relative to its base  
16 case in the 2008 financial -- integrated financial  
17 forecast.

18 That's fair?

19 MR. JUDAH ROSE: Yes.

20 MR. BYRON WILLIAMS: And essentially what  
21 it did was simulate the recurrence of water flows from  
22 the historic five (5) year drought, the one (1) between  
23 April '87 and March '92, and played them out, beginning  
24 in the forecast 2000 -- year 2010/'11 and extending it  
25 through 2014/'15.

1                   Would that be fair?

2                   MR. JUDAH ROSE:    Yes, I believe that's  
3 the case.

4                   MR. BYRON WILLIAMS:   And just in terms of  
5 some of the assumptions, and if you're looking for a  
6 reference it's the page 109, the second-last paragraph,  
7 about halfway through, it would be fair to say that under  
8 this methodology of assessment, expected market  
9 conditions were assumed for thermal and import costs, as  
10 well as for other parameters of the model.

11                   Would that be flare -- fair?

12                   MR. JUDAH ROSE:    Yes.

13                   MR. BYRON WILLIAMS:   And also the  
14 consequences were examined assuming no adjustment to the  
15 base case domestic electricity rates.

16                   Fair enough?

17                   MR. JUDAH ROSE:    Yes.

18                   MR. BYRON WILLIAMS:   So would it be fair  
19 to say that all variables were held constant except for  
20 the level of water flows?

21                   Would that be fair?

22                   MR. JUDAH ROSE:    Yes, and the direct  
23 consequences that flow from that.

24                   MR. BYRON WILLIAMS:   And through this  
25 methodology, we get the estimate of the cost of a severe

1 second-worst in history drought in the range of \$2.2  
2 billion before financing costs, and 2.7 or 2.8 billion  
3 after financing costs.

4 Would that be fair?

5 MR. JUDAH ROSE: Yes, sir.

6 MR. BYRON WILLIAMS: Just in terms of the  
7 methodology, and you'll recall that just a few moments  
8 ago we discussed features of the proposed contracts with  
9 WSP, MP, and NSP, including weekend curtailments and call  
10 options, sir?

11 MR. JUDAH ROSE: Yes.

12 MR. BYRON WILLIAMS: And I would be --  
13 would I be correct in suggesting to you that Manitoba  
14 Hydro's simulation for the purposes of it's \$2.2 billion  
15 calculation does not take into account these -- any of  
16 the mitigation provisions for curtailment with the  
17 consummate -- consequent decrease in firm volume  
18 conditions?

19 Would that be fair?

20 MR. JUDAH ROSE: I think what would be  
21 fair would be is it's not taking into account provisions  
22 that could be exercised only in the event of a drought  
23 worse than the worst on record. Any flexibility that was  
24 inherent in the -- the contracts would be taken.

25 MR. BYRON WILLIAMS: Well, let me -- and

1 I appreciate that. Let me go one (1) step less. Would I  
2 be correct in suggesting to you that it doesn't take into  
3 account the weekend curtailment flowing -- potential  
4 flowing from the Minnesota Power and Wisconsin, WSP,  
5 Power proposed term sheets?

6 MR. JUDAH ROSE: I think that's correct,  
7 because those contracts don't start until later.

8 MR. BYRON WILLIAMS: So in your -- to  
9 your understanding those -- those mitigation measures are  
10 not taken into account in the scenario.

11 MR. JUDAH ROSE: Yes, that -- that --  
12 correct.

13 MR. BYRON WILLIAMS: And in terms of the  
14 call option scenario, to your understanding would that be  
15 taken into account in the calculation?

16

17 (BRIEF PAUSE)

18

19 MR. JUDAH ROSE: I don't believe so  
20 because the -- I think what we were talking about was a  
21 prospective contract, which I don't think in this  
22 particular analysis was in play, but I -- I'll have to  
23 think about that for a second.

24

25 (BRIEF PAUSE)

1                   MR. JUDAH ROSE:    Yes, I have a May 15th -  
2 - May 2015 starting date for the earliest of the three  
3 (3) contracts that we're talking about.  So because I  
4 don't believe that analysis covered that period of time -  
5 - well, it might have a little bit because it -- the  
6 analysis, I think, was 2014 and 2015, and depending on  
7 exactly whether May 2015 was in there is -- it might have  
8 had a tad of influence.

9                   MR. BYRON WILLIAMS:   Your understanding,  
10 it would be fair to say, that if it had any influence at  
11 all, it would be very small, i.e., a tad?

12                  MR. JUDAH ROSE:    Yes.

13                  MR. BYRON WILLIAMS:   Would I also be  
14 correct in suggesting to you that this calculation  
15 wouldn't take into account any additional mitigation  
16 tools such as hedging, which we discussed previously,  
17 which one (1) -- which a utility might employ in -- in a  
18 drought scenario?

19                  MR. JUDAH ROSE:    I believe so in the  
20 sense that the purpose of the hedge is not to change the  
21 expected value, but to change the risk and variation  
22 associated with -- with -- with the possible outcomes.  
23 So what you're doing in that circumstance is, I believe,  
24 following through the consequences of an expected price  
25 situation and -- but a lower water flow situation.

1                   MR. BYRON WILLIAMS:    And I -- I think  
2 we've agreed already that the simulation assumes no  
3 adjustment to the base case domestic electricity rates,  
4 correct?

5                   MR. JUDAH ROSE:     Yes.

6                   MR. BYRON WILLIAMS:    So it doesn't  
7 assume, for example, that the Public Utilities Board in  
8 its wisdom, in the face of a significant drought, might,  
9 in the -- the first or second year of that drought, raise  
10 rates above the otherwise base case scenario.

11                   Would that be fair?

12                   MR. JUDAH ROSE:     Yes.

13                   MR. BYRON WILLIAMS:    I inadvertently  
14 mentioned Manitoba Public Insurance before. I'm going to  
15 -- I don't know if there's a word such as "vertently  
16 (phonetic)," but I -- I'm advertently --

17                   MR. ROBERT MAYER:    That would be on  
18 purpose.

19

20 CONTINUED BY MR. BYRON WILLIAMS:

21                   MR. BYRON WILLIAMS:    But perhaps on  
22 purpose, I'm going to -- to mention the word Manitoba  
23 Public Insurance and just ask you, before we get back to  
24 Hydro, if you can indicate whether, in preparing for your  
25 written and oral evidence in this proceeding, you

1 referred to or read any prior decisions of the Manitoba  
2 Public Utilities Board relating to the regulation of the  
3 Crown-owned public insurance monopoly, Manitoba Public  
4 Insurance, or the methodology that the Public Utilities  
5 Board has employed for calculating the rate stabilization  
6 reserve of Manitoba Public Insurance?

7 MR. JUDAH ROSE: I have not. I have no  
8 knowledge of and haven't reviewed any such documents.

9 MR. BYRON WILLIAMS: Okay. Don't worry,  
10 I'm not going to present them -- them to you. It would  
11 be fair to say that you're not in a position to comment  
12 on the confidence levels that the Board might have used  
13 in those circumstances in determining an appropriate --  
14 appropriate tolerance for risk.

15 You have no knowledge of that?

16 MR. JUDAH ROSE: I have no knowledge of  
17 that.

18 MR. BYRON WILLIAMS: And likewise, you  
19 have no knowledge of whether or not the Board has  
20 rejected methodologies in -- in developing its reserves  
21 for the Crown-owned monopoly which were developed for  
22 private-sector companies operating in a competitive  
23 environment?

24 You would have no knowledge of that  
25 either?

1                   MR. JUDAH ROSE:    I have no knowledge of  
2 anything related to -- MPSI?

3                   MR. BYRON WILLIAMS:    Okay.  And I'll move  
4 on.  But in terms of confidence levels -- and -- and if  
5 you're looking for reference, probably page 113 of your  
6 evidence would -- would assist you.  That's you're  
7 September '09 evidence, sir.

8                    Regardless of what the Public Utilities  
9 Board has done with Manitoba Public Insurance, you can  
10 say with confidence that in seeking to quantify level  
11 risks at certain risk tolerances many analysts use a nine  
12 (9) -- ninety (90, nine zero (90), confidence interval.

13                    Would that be fair?

14                   MR. JUDAH ROSE:    It's my experience that  
15 people use, as I indicate, 90 and 95 percent confidence  
16 intervals pretty commonly.

17                   MR. BYRON WILLIAMS:    And in your ex --  
18 extensive experience and taking in -- into account the  
19 research you did for this specific project, it would be  
20 much less com -- common to use higher intervals, such as  
21 97 or 99 percent.

22                    Would that be fair?

23                   MR. JUDAH ROSE:    Yes, that's my  
24 experience in this sector.

25                   MR. BYRON WILLIAMS:    And in -- in terms

1 of protecting against extreme risks, protecting to a 95  
2 percent confidence level might, in your view, indeed be  
3 seen as almost over insuring against it.

4 Would that be fair?

5 MR. JUDAH ROSE: Yes, in -- in the  
6 specific context in which I'm writing, where you're  
7 looking at sort of the annual performance of the company.  
8 I mean, there are circumstances where you might be  
9 looking at tomorrow's events and you might -- that's a  
10 different sort of -- I'm referring to the annual.

11 And one (1) -- one (1) of the reasons for  
12 that is is that our society as we know it is structured  
13 around about a hundred years of experience. And so then  
14 your -- you don't have like in actuarial tables thousands  
15 of people and -- or in baseball all those pitches and --  
16 and all that data; you have a much limited set of data.

17 And so to go to the extreme of 99 percent  
18 confidence interval, et cetera, is just difficult and --  
19 and not common. It's, again, different than like life  
20 and death actuarial tables where you have a lot of data,  
21 in my experience. And I would just point to the fact  
22 that the industry itself -- you know, Edison didn't get  
23 going until 1884, and so we don't -- we don't have all  
24 that much data.

25 MR. BYRON WILLIAMS: Would -- would it be

1 fair to say as well though that apart from technical  
2 difficulties, your experience is -- is that it -- it's  
3 less common to -- to pro -- in terms of risk tolerance to  
4 seek to protect to that level?

5 MR. JUDAH ROSE: Yes. And, again, I -- I  
6 think it's circumstances -- circumstance dependant. I --  
7 there's an issue of like belt and suspenders. So  
8 sometimes you see people with belts and suspenders, but  
9 you don't see them with like five pairs of sus --  
10 suspenders. And I think that that's the type of  
11 situation that we have here, in the sense that you're  
12 looking at a situation where you have multiple  
13 protections for the Corporation in terms of the ability  
14 to raise rates, the ability to be backed by the province,  
15 et cetera, so you don't see people with, you know, that  
16 many suspe -- pairs of suspe -- suspenders.

17 And so I think that that's the -- an  
18 analogy that might be useful in this regard.

19 MR. BYRON WILLIAMS: And with your  
20 permission, I -- I intend to use it. But -- and -- and I  
21 thank you for it. And -- and I guess, in listening to  
22 your evidence and your discussion with Mr. Peters  
23 yesterday, you seem to be making the point that in terms  
24 of approaching risk you would recommend a multifaceted  
25 approach; and by which I mean certain protections in

1 retained earnings in that 90 to 95 percent confidence  
2 level, protection in the contracts, protection in terms  
3 of improved internal risk management.

4                   Would that be fair, sir?

5                   MR. JUDAH ROSE: Yes, that -- you want to  
6 have the Corporation be involved in taking the steps that  
7 are -- that are prudent across the range of activities,  
8 but you want to avoid a situation in which you're just so  
9 ham -- hampered by fear that you end up not being able to  
10 act and you -- and -- or act in a way where you think  
11 that you're eliminating risk but you're really not.

12                   And so, I think finding the right balance  
13 there is what we're recommending.

14                   MR. BYRON WILLIAMS: And you jump-started  
15 to -- to a couple of additional areas of my examination.  
16 A significant factor in looking at the risk tolerance you  
17 -- you would propose for Manitoba Public Insurance --  
18 excuse me, Manitoba Hydro. I might get your advice on  
19 Manitoba Public Insurance some other date.

20                   A significant factor is that this a Crown  
21 corporation backed by the province and operating in its  
22 domestic market at least with a monopoly?

23                   MR. JUDAH ROSE: Yes, I think that's a  
24 significant factor. It doesn't mean the company should  
25 rely on that excessively, but it's something that should

1 be factored in when comparing, for example, to say to a  
2 power marketer, it's a commercial corporation in the  
3 United States, or a bank in the United States.

4 MR. BYRON WILLIAMS: And as compared to a  
5 power marketer, you would point out a) that it would be  
6 easier with the benefit of the debt guarantee fee to  
7 raise -- to raise money in the -- in the marketplace?

8 MR. JUDAH ROSE: Yes. The -- the  
9 recapitalization potential of a commercial power marketer  
10 is inherently different than a -- than a -- you know,  
11 Crown corporation. Again, you don't want to take risks  
12 that you don't need to take.

13 It's just when you're comparing stress  
14 tests, which I think is the essence of what we were asked  
15 to do, we're looking at -- we're saying the stress test  
16 that the company is taking looks fairly similar to us to  
17 that of a power marketer. And so what it's doing is is  
18 it's trying to protect itself as -- as if it doesn't --  
19 in addition have heavy reliance on the provincial  
20 backing. And so -- but when you factor that in it -- it  
21 reinforces the fact that the company is taking a good  
22 risk posture.

23 MR. BYRON WILLIAMS: Thank you. Thank  
24 you for that. I am, with apologies, going to just drag  
25 you through this report for just a couple more moments,

1 because you had a couple of interesting recommendations  
2 for further study in terms of risk that I'd like to  
3 direct your attention to; at least one (1) of them.  
4 Perhaps you could turn to page 24 of -- of this report,  
5 being the September 2009 report.

6

7 (BRIEF PAUSE)

8

9 MR. BYRON WILLIAMS: And, Mr. Rose, I  
10 direct your attention to the bottom of -- excuse me, sir,  
11 we're just still getting there.

12

13 (BRIEF PAUSE)

14

15 MR. BYRON WILLIAMS: Page 24.

16 MR. JUDAH ROSE: I'm there.

17

18 (BRIEF PAUSE)

19

20 MR. BYRON WILLIAMS: Mr. Rose, I want to  
21 direct your attention to the bottom of page 24 of your  
22 report, being the September 2009 report. And you suggest  
23 that in terms of further study, one (1) analysis could be  
24 if the 2003/'04 drought were re -- repeated but the  
25 proposed contract's terms and conditions were in place,

1 and with the blanked out word with the decrease in firm  
2 volume provisions, what -- what would have been the loss  
3 incurred at the Company and how much market purchases  
4 would have been required?

5 Do you see that reference, sir?

6 MR. JUDAH ROSE: Yes.

7 MR. BYRON WILLIAMS: And I wonder if just  
8 for a moment or two (2) you could provide some  
9 information on -- on -- on why you think that would be  
10 helpful.

11 MR. JUDAH ROSE: Well, I think it's a  
12 theme in their report. My experience is is that the --  
13 the balance you're trying to achieve is you -- the  
14 benefit of explicitness is helping the company think  
15 through what's changed, what they're going to be doing,  
16 and how they communicate internally and externally, and  
17 with the regulators, for example, with the board, et  
18 cetera. And I think that that's helpful -- it's a  
19 helpful thing to do.

20 At the same time, you want to also  
21 maintain discretion, recognizing there's no plan that's  
22 going to be able to be -- withstand any future event;  
23 there's going to be unexpected events and so you want to  
24 find the right balance there.

25 And what I found is the Corporation had a

1 lot of experience, a lot of good thinking, a lot of  
2 elements of the plan, but it hadn't been written up, and  
3 I felt that it would be beneficial to write it up and to  
4 conduct some additional analyses, or simulations, or --  
5 and in the -- in the emergency area -- area of -- you  
6 know, emergency may be not the right analogy, but as you  
7 get into these circumstances, sort of having drills and  
8 simulations can be -- can be a helpful process. It  
9 equates people with what the process is like, what their  
10 role is, what's the likely -- likely set of outcomes that  
11 they'd be facing, and the type of communications that  
12 you'll need to undertake at that time.

13 MR. BYRON WILLIAMS: And you make this  
14 reference in -- in the context, I guess, of drought  
15 preparedness. Do you see research of this -- or this  
16 additional testing of the sub -- sub -- ty -- type you  
17 suggest at the bottom of page 24, being of some  
18 assistance to external parties, including rate  
19 regulators?

20 MR. JUDAH ROSE: Well, you know, it's to  
21 -- I think it's to the -- I -- I have a graphic here --  
22 just a -- just to exactly what I'm referring to.

23 MR. BYRON WILLIAMS: It's in the page  
24 fifties, sir. Right.

25 MR. JUDAH ROSE: Page -- page 53. And so

1 you know, all of the entities involved at some point in a  
2 drought are going to be needing to communicate,  
3 particularly as the drought gets more severe. And  
4 they're going to have to be communicating about hedging,  
5 about the decisions that they're going to be doing, the  
6 financial consequences, the rate consequences, where they  
7 are, and -- and so that's what I had in mind.

8           Again, I think a lot of this is in place  
9 already, but I think a formal write-up can be helpful to  
10 supplement some of the -- the documents that I refer here  
11 that already exist.

12           MR. BYRON WILLIAMS: Thank you for that.  
13 Moving to a slightly different area of discussion. I --  
14 I gave myself ten (1) more minutes, Mr. Vice Chair. We  
15 are nearing the end.

16           At page 68 of your February 2011 report,  
17 I'd ask you to have that at -- at hand, as well as  
18 CAC/MSOS Exhibit number 11, which is the excerpt from the  
19 reports of Professors Kubursi and Magee.

20           MR. JUDAH ROSE: Yes, sir.

21           MR. BYRON WILLIAMS: We're just waiting  
22 for people to get it, Mr. Rose.

23

24

(BRIEF PAUSE)

25

1                   MR. BYRON WILLIAMS:    I have an additional  
2 copy here if parties need it.

3

4                                   (BRIEF PAUSE)

5

6                   MR. BYRON WILLIAMS:    And, Mr. Rose, I'll  
7 get to you in a second.

8                   Just -- Mr. Chairman, I've got three (3)  
9 areas to cover. I estimate kind of six (6) or seven (7)  
10 minutes on each of them, so if the -- if the panel in its  
11 wisdom wants me to shorten it, please let me know because  
12 I can probably knock out an area or two (2).

13                   THE CHAIRPERSON:    You got to do what you  
14 have to do, Mr. Williams.

15

16 CONTINUED BY MR. BYRON WILLIAMS:

17                   MR. BYRON WILLIAMS:    Mr. Rose, at -- at  
18 page 68 of your evidence, the second bullet, you make the  
19 statement that all evidence supports the likelihood of a  
20 five (5) year or greater drought being approximately 3  
21 percent, correct?

22                   MR. JUDAH ROSE:    Yes.

23                   MR. BYRON WILLIAMS:    And in terms of the  
24 choice of words, "all evidence," you mean not just your  
25 assessment in the ICF report, but it would be fair to say

1 that you suggest that support for the -- that probability  
2 can also be found in the reports of Professors Kubursi  
3 and Magee.

4                   Would that be fair?

5                   MR. JUDAH ROSE:    That's my current  
6 thinking.  I -- I must confess there's some uncertainty  
7 in my mind as exactly the -- that I'm interpreting their  
8 information properly, but I just go back to the basic  
9 common-sense statistical notion:  We have a hundred years  
10 approximately, we have three (3) events, maybe two (2)  
11 events, and that's about 3 percent.  And nothing is, in  
12 my view, going to change that unless -- until -- and  
13 until we get more information.

14                   MR. BYRON WILLIAMS:   And certainly I  
15 don't think my clients are disagreeing with you, but just  
16 in terms of your use of all evidence, I just want to draw  
17 your -- make sure you at least and my clients are on all  
18 fours in terms of your interpretation of Kubursi and  
19 Magee.

20                   And I'd ask you to turn to page 162 of  
21 their evidence, which is found on the -- the second page  
22 of that excerpt I've provided you.

23                   Do you have that, sir?

24                   MR. JUDAH ROSE:    This is the hundred and  
25 -- page 8 -- 188, on the bottom?

1                   MR. BYRON WILLIAMS:    Sorry, I'm referring  
2 to the excerpt, page 162.

3                   MR. JUDAH ROSE:     I have it.

4                   MR. BYRON WILLIAMS:   And I -- I guess  
5 first of all I'm going to talk to an econometrician and  
6 then try and talk to you in -- in lawyerese.

7                   But in the third paragraph there, you see  
8 a statement by Kubursi and Magee that they're able to  
9 simulate the distribution of the minimum annual water  
10 flow, et cetera, suggesting it's more informative than  
11 simple historical, and finding that the actual minimum  
12 lies roughly in the middle of our 95 percent intervals,  
13 and that the means and medians are greater than the  
14 actual minimum.

15                   And they go on to say, on the one (1)  
16 hand, that this reassures us the use of the actual  
17 minimum, as a kind of benchmark worst possible case  
18 scenario, is not unduly optimistic or pessimistic.

19                   Do you see that, sir?

20                   MR. JUDAH ROSE:     Yes, I do.

21                   MR. BYRON WILLIAMS:   And -- and again,  
22 going back to your statement of all evidence, I wanted to  
23 translate what the distinguished professors are saying  
24 into something that -- that I could understand.

25                   Would it be your understanding of this

1 paragraph that it's -- that the good professors are  
2 finding that their approach yields a similar estimate of  
3 the probability of an adverse water event to that found  
4 by Manitoba Hydro?

5 MR. JUDAH ROSE: Yes. In that particular  
6 case, I think they're -- that's what they're saying.

7 MR. BYRON WILLIAMS: And when they use  
8 language such as "the approach taken by Manitoba Hydro  
9 does not appear to" -- oh, excuse me. Let me try this  
10 again. When they use language such as "ex -- not  
11 excessively optimistic or pessimistic," would I be --  
12 would you interpret that to mean they're suggesting that  
13 Manitoba Hydro does not appear to be biased?

14 Would that be fair, at least in your  
15 understanding?

16 MR. JUDAH ROSE: Yes, with that caveat, I  
17 think that that's my read of that.

18 MR. BYRON WILLIAMS: And -- and that  
19 would be the -- to some degree at least, the basis of  
20 your assertion that -- that all evidence supports a  
21 likelihood of a five (5) year or greater drought being  
22 approximately 3 percent.

23 Would that be fair?

24 MR. JUDAH ROSE: Well, I think, in this  
25 particular case -- and again, I'm reading it, as you see

1 in the -- in their first sentence, it says "minimum  
2 annual water flow." So I think that, in this case,  
3 they're just looking at one (1) year, which is an  
4 important parameter for the company, and they're saying  
5 it -- it looks good is the way I'm reading it.

6 And -- and I guess -- and I -- what I  
7 would say is, if they had come to a different conclusion,  
8 I would have been concerned, because it's just restating  
9 the fact that the best evidence about what the worst year  
10 was the worst year, because we've got about a hundred  
11 years worth of data.

12 MR. BYRON WILLIAMS: Just a couple of  
13 small areas to go. And -- and if you're not aware of  
14 this, you can let me -- me know. I -- I didn't quite  
15 follow your discussion with Mr. Peters in this regard  
16 yesterday.

17 To your knowledge, were -- well, let me  
18 back up. You've -- you've made reference and you have  
19 some understanding of the existence of the Wuskwatim  
20 hydroelectric generating station, correct?

21 MR. JUDAH ROSE: Yes.

22 MR. BYRON WILLIAMS: And it's your  
23 understanding that it's -- it has been recent -- it's in  
24 -- nearing completion, correct?

25 MR. JUDAH ROSE: Yes.

1                   MR. BYRON WILLIAMS:    And it -- it  
2 wouldn't be much of a stretch and it would not surprise  
3 you to know that there was a regulatory proceeding relate  
4 -- to consider the need for an alternatives to the hydro-  
5 electric generating station, that would not surprise you?

6                   MR. JUDAH ROSE:     Well, we're getting back  
7 into that surprise issue.  I'm -- I'm not sure what  
8 you're referring to, and I guess I could say it wouldn't  
9 surprise me, but I'm not really sure what that means.

10                  MR. BYRON WILLIAMS:    Okay, fair enough.  
11 Let -- let me big picture this.  ICF in its review of the  
12 setting of export prices and export price forecasts by  
13 Manitoba Hydro, did you examine any low and high  
14 forecasts put in the public domain by Manitoba Hydro  
15 relating to -- in -- in the course of any Wuskwatim  
16 proceeding and projecting results from 2005 through  
17 2011/'12?

18                                 In other words, did you test in your  
19 report Hydro's history in recent years in terms of  
20 forecasting results between the '05/'06 and '11/'12  
21 years?

22                   MR. JUDAH ROSE:     No, I -- I -- that was  
23 not part of our scope.  And I would add I -- I don't  
24 think it was necessary in the sense that the adequacy  
25 assessment was based on forecasts from other entities,

1 not from Manitoba Hydro.

2 MR. BYRON WILLIAMS: And -- and let me be  
3 more precise. You didn't backcast or analyze the success  
4 of other entities in terms of forecasting Hydro's rate --  
5 expected export prices in the '05/'06 through '11/'12  
6 years.

7 Would that be fair?

8 MR. JUDAH ROSE: Yes, that is fair. I --  
9 we didn't do that.

10 MR. BYRON WILLIAMS: Now, you -- you had  
11 a engaging conversation with my friend, Mr. Peters, on --  
12 in terms of footnote 2, which appears at page 4 of your  
13 September 2009 evidence. And I -- I hate to turn you  
14 there for two (2) questions, but I'm going to.

15 Do you recall that conversation?

16 MR. JUDAH ROSE: Yes.

17 MR. BYRON WILLIAMS: And that  
18 conversation to -- I'll suggest to you, related to a  
19 calculation -- a net present value co -- calculation  
20 exploring the relative merits of the sale case versus the  
21 no-sale case.

22 Would that be fair?

23 MR. JUDAH ROSE: Yes.

24 MR. BYRON WILLIAMS: And in terms of that  
25 net present value, you'll agree that any such calculation

1 would have to -- to employ a discount rate, correct?

2 MR. JUDAH ROSE: Yes.

3 MR. BYRON WILLIAMS: And could you advise  
4 our -- my clients what, to -- to your knowledge, that  
5 discount rate was, please?

6

7 (BRIEF PAUSE)

8

9 MR. JUDAH ROSE: I don't remember what  
10 the discount rate is. I can't -- I -- I can't say what  
11 it is.

12 MR. BYRON WILLIAMS: Would you undertake  
13 to provide it?

14 MS. PATTI RAMAGE: I would suggest  
15 Manitoba Hydro will undertake to provide it. It's a  
16 Manitoba Hydro document.

17 MR. BYRON WILLIAMS: I appre --

18 MS. PATTI RAMAGE: And I'm going to -- I  
19 think we're okay, but subject to any confidentiality  
20 concerns, but I think it's okay.

21

22 --- UNDERTAKING NO. 65: ICF to indicate what the  
23 discount rate was

24

25 CONTINUED BY MR. BYRON WILLIAMS:

1                   MR. BYRON WILLIAMS:   And -- and, Mr.  
2   Rose, ju -- just so I understand, you -- you looked at  
3   Manitoba Hydro's calculations.  Did -- did the  
4   independent consultants at ICF perform any examination of  
5   a levelized revenue requirement over the same period of  
6   time?

7                   MR. JUDAH ROSE:    No, I don't remember  
8   doing anything like that.

9                   MR. BYRON WILLIAMS:    Okay.  The last  
10  couple of questions go to the issue of imported power.  
11  And you'll agree that your terms of reference included  
12  assess -- assessing the appropriateness of Hydro entering  
13  -- entering into long-term firm contracts twenty (20) to  
14  thirty (30) years into the future, correct?

15                  MR. JUDAH ROSE:    Yes, sir.

16                  MR. BYRON WILLIAMS:   And you've certainly  
17  in your evidence characterized Hydro as being in the  
18  hydro-electric based power export business, correct?

19                  MR. JUDAH ROSE:    Yes.

20                  MR. BYRON WILLIAMS:   But it would be your  
21  understanding, would it not, that Manitoba Hydro's firm  
22  supply of power which, net of anticipated domestic needs,  
23  is the basis for long-term firm contracts is based on the  
24  calculation of dependable energy, correct?

25                  MR. JUDAH ROSE:    Yes, there is a -- it is

1 part of the calculation, yes.

2 MR. BYRON WILLIAMS: And you'd agree as  
3 well that the dependable energy supply includes energy  
4 for hydro-electric and thermal stations, purchases from  
5 wind farms, firm energy imports from out of province, as  
6 well as contracted non-firm imports from the reserves of  
7 neighbouring utilities.

8 Fair enough?

9 MR. JUDAH ROSE: Could you go through  
10 that list again, please?

11 MR. BYRON WILLIAMS: Yeah, and I really  
12 want you to confirm your understanding that dependable  
13 supply includes energy from hydro-electric and thermal  
14 stations, purchases from wind farms, firm energy imports  
15 from out of province, as well as contracted non-firm  
16 imports from the reserves of neighbouring utilities.

17 Would that be fair?

18 MR. JUDAH ROSE: I guess what I can say  
19 is I agree with everything there. My recollection is  
20 there isn't import -- there is an amount of imports, as  
21 to whether that's firm or non-firm. I believe that the  
22 quantity that you can import is closely limited to the  
23 firm amount.

24 MR. BYRON WILLIAMS: Yeah, and I  
25 apologize for not sharing that. Contracted non -- it

1 would be your understanding, further to that, that  
2 contracted non-firm imports for medium firm law -- loads  
3 should not exceed 10 percent of the firm energy  
4 requirement.

5 Would that be fair, subject to check?

6 MR. JUDAH ROSE: Subject to check. It's  
7 -- there's a limited amount of imports that's considered  
8 as contributing to that number, is my recollection.

9 MR. BYRON WILLIAMS: And -- and without  
10 trying -- in a couple of questions my clients are going  
11 to seek your guidance. So without trying to provoke  
12 controversy you'll agree with my suggestion that the  
13 inclusion of thermal stations and imports in its  
14 determination of dependable energy and the commitments to  
15 firm contracts exposes Manitoba Hydro to certain added  
16 risks during droughts.

17 Would that be fair?

18 MR. JUDAH ROSE: Um --

19 MR. BYRON WILLIAMS: I can elaborate if  
20 that would assist you, sir.

21 MR. JUDAH ROSE: Right. It is -- it does  
22 open -- I think it's fair to say there's some additional  
23 financial risks that are in -- involved from that.

24 MR. BYRON WILLIAMS: And without trying  
25 to belabour the point, some of those risks could be the

1 risk of higher fuel prices for operating thermal plants  
2 to meet firm commitments backed by such plans. That  
3 would be one (1) risk?

4 MR. JUDAH ROSE: Yes.

5 MR. BYRON WILLIAMS: And another risk  
6 would be the risk of higher market prices to meet firm  
7 commitments that are backed by imports.

8 MR. JUDAH ROSE: Yes, subject to the  
9 contract provisions that we discussed earlier.

10 MR. BYRON WILLIAMS: The question is is  
11 in -- in terms of the -- in terms of the definition of  
12 dependable energy for the purposes of supporting long-  
13 term firm contracts, conceivably an alternative approach  
14 might be having all firm exports backed by just hydro-  
15 electric. Conceptually that's a concept that -- that you  
16 could -- that you could conceive of, sir?

17 MR. JUDAH ROSE: Yes, and I -- and I  
18 believe to a certain extent the Company has done that  
19 through the contract terms by backing it up based on the  
20 hydro system rather than the entire system.

21 MR. BYRON WILLIAMS: And I -- I accept  
22 that. Did ICF in its analysis look at going perhaps a  
23 step farther and removing those -- those resources from  
24 the calculation of dependable energy for the purposes of  
25 supporting the firm supply of power?

1                   MR. JUDAH ROSE:   Well, we've -- we've  
2 looked at some of the discussion that -- on that issue,  
3 and the first issue is does it contribute to net  
4 dependable resources, and the answer is: yes.

5                   And I didn't see any -- I don't -- I don't  
6 see here any re -- reason to ignore that energy and to  
7 further reduce the -- the sales of the company, given the  
8 fact that it has already taken steps to protect itself.

9                   MR. BYRON WILLIAMS:   And going forward,  
10 recognizing these steps to protect itself, let me back  
11 up. One (1) of those steps to protect itself would be  
12 the call option. Would that be fair?

13                   MR. JUDAH ROSE:   Yes.

14                   MR. BYRON WILLIAMS:   Let's go one (1)  
15 step further. Has -- has ICF considered in the absence  
16 of such a term whether Hydro should be making firm com --  
17 commitments backed by thermal or imports?

18                   MR. JUDAH ROSE:   I mean, I think the  
19 issue here is is you're focussing on your hydro  
20 resources, and you're asking yourself under extreme  
21 circumstances, would you -- can you meet your load with  
22 the -- with the thermal resources, and I think that  
23 that's a -- a reasonable thing to make sure that you can  
24 do. And so I think what they're doing is, to me, is  
25 reasonable.

1 MR. BYRON WILLIAMS: Mr. Chairman, I  
2 thank the -- the Board for its patience, and Mr. Rose, I  
3 -- I thank you, as well.

4 MR. JUDAH ROSE: My pleasure.

5 THE CHAIRPERSON: Thank you, Mr.  
6 Williams. We'll take a short break, and when we come  
7 back we'll start with MIPUG's counsel.

8 MR. BYRON WILLIAMS: And -- and Mr.  
9 Chairman, just -- I -- I may be disappearing from the  
10 room to go meet another deadline that Mr. Singh has  
11 apposed -- imposed upon me. So if I disappear, it will  
12 be for those other purposes.

13 THE CHAIRPERSON: I -- I think we know  
14 how busy you are, Mr. Williams.

15  
16 --- Upon recessing at 2:23 p.m.

17 --- Upon resuming at 2:40 p.m.

18

19 THE CHAIRPERSON: Okay. Welcome back,  
20 everyone. Mr. Hacault for MIPUG is next up. Please  
21 proceed.

22

23 CROSS-EXAMINATION BY MR. ANTOINE HACAULT:

24 MR. ANTOINE HACAULT: Thank you, Mr.  
25 Chairman, members of the Board. Hopefully to provide

1 some context as to what I propose to do in this cross-  
2 examination, I'll just briefly outline the things I  
3 wanted to try and achieve.

4           Firstly, I have some general questions  
5 about the context and this witness's understanding of the  
6 Manitoba electricity area.

7           Second, I have some specific questions  
8 focussed on the report that may not fall within the  
9 scoping issues.

10           Third, I intend to try and cover other  
11 areas specifically as it relates to the four (4) scoping  
12 issues identified in the Board order.

13           So firstly, are -- are the internal  
14 capabilities and government structures of Manitoba Hydro  
15 sufficient?

16           Secondly, is this Crown corporation's  
17 approach to risk management appropriate?

18           Third, is the risk-reward tolerance  
19 acceptable for Manitoba Hydro ratepayers?

20           And finally, in the context of the quantum  
21 of fin -- financial reserves required to target residual  
22 risk items, whether Manitoba Hydro's assessment of risk  
23 and the assessment of the quantum of risk is reasonable?

24           The first matter, Mr. Rose. In the IRs  
25 there was an indication that other people participated in

1 the preparation of this report. There was -- I hope I  
2 mis -- don't mispronounce these.

3 Shanthi Muthiah, could you explain what  
4 her qualifications were, and her role was in preparing  
5 this report? She's not here today to testify.

6 MR. JUDAH ROSE: Right. She is --  
7 specializes in the financial support and due diligence  
8 work that we do with the financial sector vis-a-vis the  
9 value of power plants, wholesale electric prices, et  
10 cetera, contracting.

11 MR. ANTOINE HACAULT: Okay. Next there  
12 was Nanish Gupta. What was her role in preparing this  
13 report?

14 MR. JUDAH ROSE: Nanish Gupta, actually  
15 it's a him, he was specializing in the risk-management  
16 area.

17 MR. ANTOINE HACAULT: And Sunita Surana?

18 MR. JUDAH ROSE: Sunita Surana was  
19 assisting in many phases of the effort, covering a fairly  
20 broad range of -- of activities. Her speciality is in  
21 wholesale power.

22 MR. ANTOINE HACAULT: Okay. And finally,  
23 George Katsigiannakis.

24 MR. JUDAH ROSE: George Katsigiannakis is  
25 a very hard name to pronounce, and I'm not sure that I

1 could even spell it after having worked with him for  
2 fifteen (15) years. But he -- he's -- he's a modelling  
3 specialist, among other things.

4 MR. ANTOINE HACAULT: So in your opinion,  
5 when you're putting the proposal together, these people  
6 who were chosen to bring to the report the required  
7 expertise to provide a good product to the client,  
8 Manitoba Hydro?

9 MR. JUDAH ROSE: Yes.

10 MR. ANTOINE HACAULT: Did these people  
11 also have access to the other areas of expertise of ICF  
12 as needed?

13 MR. JUDAH ROSE: Yes.

14 MR. ANTOINE HACAULT: Now, I'm going into  
15 the context, Manitoba Hydro-Electric context. I'm going  
16 to cover some concepts, and you may or may not be able to  
17 confirm your understanding of them, but at least I'd like  
18 to go through them. The first is, I'm suggesting to you  
19 that Manitoba Hydro is required to operate its business  
20 on a cost-of-service basis. Do you have any knowledge of  
21 that as a context?

22 MR. JUDAH ROSE: Yes. Again, I'm not an  
23 expert in the legal situation here, but it's a -- but,  
24 you know, it's a not-for-profit entity that's working on  
25 a cost-of-service basis is how I'd -- my understanding of

1 what's the situation here.

2 MR. ANTOINE HACAULT: The next kind of  
3 conceptual basis is that Manitoba Hydro's shareholder,  
4 I'm going to say the province, collects substantial  
5 payments -- you may not agree with my qualification of it  
6 -- from Hydro, but it's not based on earnings or  
7 dividends. Instead, the province collects water rental  
8 charges and also debt-guarantee fees.

9 Is that kind of a contextual thing that  
10 you have any understanding of?

11 MR. JUDAH ROSE: I haven't focussed a lot  
12 in on that, I've been focussing in on other aspects of  
13 the relationship.

14 MR. ANTOINE HACAULT: Okay. You're not  
15 suggesting that it's incorrect, though?

16 MR. JUDAH ROSE: No.

17 MR. ANTOINE HACAULT: You --

18 MR. JUDAH ROSE: I'm -- I'm suggesting I  
19 haven't really researched that specific area.

20 MR. ANTOINE HACAULT: Okay. I'd also  
21 like to suggest to you that in Manitoba, Manitoba Hydro  
22 ratepayers should only pay for what is used and useful in  
23 the production of electricity for them. Do you have any  
24 understanding of that context in utility rate hearing  
25 issues?

1                   MR. JUDAH ROSE:    I -- I do.  Again, I'm  
2  not a lawyer, and I'm not here to opine on the laws of  
3  Manitoba, but more to say that that's the general concept  
4  in cost-of-service regulation, and it's my sense that it  
5  applies here in some manner.

6                   MR. ANTOINE HACAULT:    Okay.  So your  
7  understanding is that that concept does apply in a fairly  
8  common manner in the United States of America?

9                   MR. JUDAH ROSE:    Yes.  It's a -- it's a -  
10 - it's not only in the United States of America.  It's a  
11 -- and I'm not a lawyer, I'm just saying that my general  
12 experience is -- is that there's -- its cost-of-service  
13 and used of -- useful concepts are fairly broadly  
14 applied.

15                  MR. ANTOINE HACAULT:    Also in the  
16 context, I'm going to suggest to you that, in rate  
17 setting for a Crown corporation, there should be a  
18 balance for the need for Manitoba Hydro to be stable and  
19 financially sound, balanced with the need to ensure that  
20 ratepayers are charged just and reasonable rates.  Does  
21 that sound like a fair concept to you?

22                  MR. JUDAH ROSE:    It does.  There's  
23 literature.  Actually, the Bonbright Conference refers to  
24 Professor Bonbright whose book is usually considered a  
25 Bible on the issue of cost-of-service regulation, and he

1 explicitly discusses the issue of stability on the part  
2 of the Corporation as well as the interest in -- in  
3 minimizing the rates subject to prudent and reliable  
4 service.

5 MR. ANTOINE HACAULT: Next, I'm going to  
6 get into some of the difference between a private utility  
7 and a public utility. First, you would agree that there  
8 are no private shareholders for Manitoba Hydro?

9 MR. JUDAH ROSE: That's my understanding,  
10 yes.

11 MR. ANTOINE HACAULT: Secondly, and this  
12 deals with some of the issues we deal with later on, it's  
13 a Crown corporation, and the debt is guaranteed by the  
14 Province of Manitoba, is that your understanding?

15 MR. JUDAH ROSE: Yes.

16 MR. ANTOINE HACAULT: Okay. And we've  
17 already dealt with this, but in Manitoba there's a strong  
18 monopoly. Nobody else can sell hydro except through  
19 Manitoba Hydro.

20 MR. JUDAH ROSE: Yes, that's my  
21 understanding.

22 MR. ANTOINE HACAULT: Now, when I read  
23 your CV, your experience was to a large extent with  
24 respect to privately-owned utilities. To the extent that  
25 this is so, do you acknowledge that there may be

1 different principles applicable to privately-owned  
2 utilities as opposed to publically-owned utilities?

3 MR. JUDAH ROSE: There are differences in  
4 the regulation of those companies. And in my experience,  
5 I -- I do work for municipalities and cooperatives  
6 currently, but it is true also that the majority of the  
7 companies in the United States are privately held, and  
8 that's the majority of my clientele.

9 MR. ANTOINE HACAULT: In your view, does  
10 Hydro own an attractive fleet of assets low-cost  
11 generation?

12 MR. JUDAH ROSE: Yes.

13 MR. ANTOINE HACAULT: Okay. Even if a  
14 drought hits, this is still an attractive fleet of long-  
15 term assets, particularly as flows are mean reverting,  
16 they go back to the mean, you may have highs or lows?

17 MR. JUDAH ROSE: Yes, I think that's the  
18 -- that's a fair characterization. The essence of the  
19 situation here is very attractive hydro conditions, but  
20 there -- there is some very -- there is significant -- or  
21 some variability.

22 MR. ANTOINE HACAULT: And one (1) of the  
23 differences between a private competitive environment and  
24 this environment is that Hydro has the ability to raise  
25 rates with the approval of the PUB. It's not stuck with

1 domestic rates which would be set by the market; is that  
2 correct?

3 MR. JUDAH ROSE: Yes, the -- as I  
4 understand it, the rates are an outcome of a regulatory  
5 pro -- process.

6 MR. ANTOINE HACAULT: That being said,  
7 you have confirmed that the current level of rates is one  
8 of the lowest in North America -- or the lowest I think  
9 you said?

10 MR. JUDAH ROSE: As far as I can tell,  
11 it's the lowest with the data that I have.

12 MR. ANTOINE HACAULT: Now, I'd like you  
13 to go to your report prepared in September of '09, I  
14 believe it was, and in particular at page 2. Now, this  
15 whole section talks about whether Manitoba Hydro-Electric  
16 Board should be in the export business. And you  
17 basically conclude it's absolutely yes, and it's just how  
18 you're going to do it?

19 MR. JUDAH ROSE: Yes, sir.

20 MR. ANTOINE HACAULT: Now, if with hydro-  
21 electric utilities you have to have this extra margin  
22 over deben -- dependable energy, you'd have to be in the  
23 export business to deal with that extra energy, wouldn't  
24 you?

25 MR. JUDAH ROSE: Yes. In this particular

1 case, the only market that can absorb the hydro surplus  
2 in particular is an external market.

3 MR. ANTOINE HACAULT: Okay. And we had  
4 some questions by counsel of the Board with respect to  
5 the first-year cost of a utility, and you responded a  
6 number of times, well, that we shouldn't just look at  
7 that, but I didn't understand, and I'm a newbie to this,  
8 exactly what you would mean with respect to that answer.

9 How does this work? Do you expect a loss  
10 perhaps in the first couple years reverting to a profit  
11 in the latter years so that over the extended life of the  
12 project it's a good decision?

13 MR. JUDAH ROSE: That's part of it. That  
14 is, if you buy a washing machine and it cost you a  
15 hundred dollars, you know, you have to look at the fact  
16 that the washing machine's going to last five (5) years  
17 or something like that, so that's an extreme example.

18 So it's not only that, however. It's the  
19 issue that we -- Mr. -- Commissioner Mayer and I  
20 discussed, which is -- is that in this particular  
21 situation you're looking at sort of the with and the  
22 without. And be -- and it may be that, for example,  
23 you're going to build the power plant anyway, you're just  
24 going to build it a little bit earlier. And -- and so  
25 it's not necessarily the total cost of the equipment

1 that's being used for the exports, it's the acceleration  
2 of the -- of the cost, or that you're changing your  
3 production profile in terms of how you use the equipment  
4 or what you build.

5                   So you want to definitely look at it as a  
6 with and without proposition, recognizing that one of the  
7 features we have here is is that you're using the export  
8 contracts to handle the fact that you -- it's impossible  
9 to balance exactly your capacity expansion and your load.  
10 And so there's like a lumpiness issue. And so -- and  
11 you're -- you're -- you have the opportunity to affect  
12 that by -- by accelerating things.

13                   So it's a number of things that are going  
14 on and -- and that's I think why I felt so strongly that  
15 you need to look at it with and without and take into  
16 account all of the ongoing future costs and benefits.

17                   MR. ANTOINE HACAULT: And sometimes that  
18 can be pretty scary. I -- my foray into public utility  
19 regulation was one (1) of the first hearings that  
20 Manitoba Hydro had to do, and my recollection, faint as  
21 it may be, was everybody was really scared about  
22 Limestone because the in- service costs were going to be,  
23 I don't know, in the range of three (3) cents per  
24 kilowatt hour and the export market at that time might  
25 have only been around one (1) cent, and everybody was

1 really concerned that this was going to be a disaster for  
2 Manitobans, that it was going to cost Manitobans a lot.

3 And we see now that, in fact, I think your  
4 evidence was that one (1) of the reasons we have lower  
5 rates is because the export revenues are in fact lowering  
6 the rates which otherwise would be paid. And I suggest  
7 to you that's in part because of this Limestone facility.

8 MR. JUDAH ROSE: Well, without getting  
9 into the details of the Limestone facility and just so I  
10 will be clear vis-a-vis the -- the Board. You know,  
11 there was some dialogue with counsel here, Mr. Peters,  
12 with respect to whether you want to look on a going-  
13 forward basis or you want to look on a historical basis.  
14 And I said the bottom line is you've got to look on a  
15 going-forward basis.

16 But, you know, we also sort of talked a  
17 little bit about what are the sources of wisdom when  
18 you're looking forward. One (1) source of wisdom is  
19 these par -- modelling projections that you're doing  
20 based on, if you will, the fundamentals of what's going  
21 on.

22 Another is sometimes you have prices, we  
23 have in this particular case, for at least part of it,  
24 we've got prices -- we've talked about greater than  
25 eighty-seven (87), they escalate over time.

1                   Another source of wisdom is history. And  
2 I think I was just pointing out that the history has been  
3 favourable for the Corporation and for the province, and  
4 while that is not the only piece of information that you  
5 want to have, it is worth reviewing that -- that history.

6                   MR. ANTOINE HACAULT: Thank you, sir. So  
7 am I understanding you right that if you need to bring  
8 new plant in any event to meet domestic load, you may as  
9 well not load all of those costs of the new plant on the  
10 Manitoba customers if you can do some long-term  
11 arrangements and short-term export prices to alleviate  
12 the load on Man -- Manitoba domestic customers, that's a  
13 good thing to do?

14                   MR. JUDAH ROSE: As a general matter,  
15 that's something that should be thoroughly investigated  
16 because what we have is clear evidence that there's a  
17 willingness to pay pretty high prices for this supply,  
18 and particularly in the contracted area, it's -- it's --  
19 I think the evidence is clear that the term-sheet prices  
20 are very attractive relative to what's being paid locally  
21 now. And that is something that should be exploited as  
22 one (1) of the, you know, endowments of the province.

23                   I know Mr. Mayer was talking about the  
24 Great North. So I understand it that the north is where  
25 a lot of this water is coming from. And so one (1) of

1 the great endowments of the province is this rich hydro  
2 resource and it should be explored and taken advantage  
3 of.

4 MR. ANTOINE HACAULT: Could I bring you  
5 to page 15 of your September report.

6 MR. JUDAH ROSE: I'm there.

7

8 (BRIEF PAUSE)

9

10 MR. ANTOINE HACAULT: At the very first  
11 paragraph which starts:

12 "The drought of 2003/2004."

13 Do you see that?

14 MR. JUDAH ROSE: Yes, sir.

15 MR. ANTOINE HACAULT: I'm going to  
16 continue reading it:

17 "...was severe, albeit not exceeding  
18 over five (5) or seven (7) years as  
19 happened in previous extreme droughts,  
20 created financial challenges for the  
21 Corporation and was also associated  
22 with the need to meet firm export  
23 requirements for the marketplace."

24 And this is what I wasn't too sure you  
25 meant, or what you meant with this.

1                   "From the marketplace in excess of that  
2                   planned by system planning."

3                   Was that Manitoba Hydro's system planning  
4 department, or...?

5                   MR. JUDAH ROSE:     Yes.

6                   MR. ANTOINE HACAULT:   And is that  
7 critical of that department?

8                   MR. JUDAH ROSE:     No, it's more a  
9 consequence of the way the industry is structured.  Some  
10 industries will give you a demand estimate, say the worst  
11 in a hundred (100) years.  Like sometimes you see like  
12 flood insurance -- are always talking about the worst in  
13 a hundred year flood.  That's the only thing they ever --  
14 they ever really talk about.

15                   In our industry, we talk about expected  
16 electricity demand.  That means, half the year the system  
17 planning department is -- estimate is too low, and half  
18 of it's too high.  By definition it's the expected or  
19 most likely value.

20                   The same thing in the hydro, and as you --  
21 as you progress in time you get more information and  
22 you're able to deviate from the long-term average  
23 temperature or hydro flow, and you're updating it and  
24 you're adjusting.

25                   And that's what -- that's what's necessary

1 to -- that's what the business is -- involves, and that's  
2 what I was referring to. And I don't think it's  
3 necessarily an error. It's just that you're -- you're  
4 gaining -- you're gaining more information over time.  
5 You're getting smarter over time.

6 MR. ANTOINE HACAULT: Okay. Thank you.  
7 Now I'm going to direct your attention to the  
8 organizational issues. I had indicated at the very  
9 beginning I was going to treat four (4) different issues  
10 in the scoping. The first one (1) is Manitoba Hydro's  
11 organization.

12 At pages 52 and 53 of your September  
13 report, there is an overview of Manitoba Hydro's risk  
14 management and control plan, and you've, also if you want  
15 to open up your PowerPoint presentation, dealt with that  
16 at pages 95 of that PowerPoint. So fifty-two (52) and  
17 fifty-three (53) of the September report, and I have the  
18 PowerPoint at page 95, that deals with those issues also.

19 Now, this is a pretty big mouthful, but  
20 one (1) of the issues that has scoped -- been scoped in  
21 the risk issue, was whether Hydro had the required  
22 capabilities, internal organization, qualified staff,  
23 policies and procedures, and oversight in governance  
24 structures needed to appropriately manage the export and  
25 drought risks.

1                   So let's take that in small bites. In  
2 your opinion, does Hydro have the required capabilities?

3                   MR. JUDAH ROSE: You know, the -- the  
4 conclusions in the report were that, overall, the -- the  
5 capabilities were there but that there were some  
6 improvements that were recommended, in particular in the  
7 middle office area, and some of the explicitness in -- in  
8 the -- the materials. So -- and in the PowerPoint I  
9 report that it's my understanding that some of those  
10 improvements have -- have been made.

11                   Overall, I -- I found the company very  
12 much sensitive and oriented towards managing the risk,  
13 but there were some recommendations for improvement.

14                   MR. ANTOINE HACAULT: So there are  
15 issues, Hydro understands them, Hydro isn't snubbing its  
16 nose to the consultant, but saying, Okay we see that  
17 there's some merit to some of this, and we're going to  
18 implement it, so leave -- all right, is it your opinion  
19 that we've improved since your initial analysis?

20                   MR. JUDAH ROSE: That's my understanding,  
21 that there have been some specific improvements in the  
22 area of oversight and quantification.

23                   MR. ANTOINE HACAULT: Okay. And is it  
24 also your view that if Hydro has felt that it doesn't  
25 have the internal expertise, that it has sought external

1 expertise to supplement its internal expertise on various  
2 issues?

3 MR. JUDAH ROSE: That's my experience.  
4 The company seems to be open to third party views, and I  
5 find that a refreshing aspect of the Corporation.

6 MR. ANTOINE HACAULT: Now, this is a  
7 pretty broad question, but you've had the opportunity to  
8 see a lot of hydro-electric organizations, firstly.

9 Is that correct?

10 MR. JUDAH ROSE: I've seen some, yes.

11 MR. ANTOINE HACAULT: Okay.

12 MR. JUDAH ROSE: There's not that many  
13 large ones in North America --

14 MR. ANTOINE HACAULT: Okay.

15 MR. JUDAH ROSE: -- but I've seen some.

16 MR. ANTOINE HACAULT: To the extent that  
17 you've seen them, is there anything that you can draw on  
18 from what you have seen which would be key things that we  
19 need to look for that haven't been dealt with yet?

20 MR. JUDAH ROSE: In terms of the  
21 recommendations that I've -- I've made, I -- I've -- I  
22 think those areas are generally areas that there -- I'm  
23 seeing improvements in, or in my understanding  
24 improvements are being made, and I don't have large  
25 concerns. I've asked -- I think that some changes in the

1 documentation would be helpful, and -- and I think these  
2 are areas around the edges rather than at the core, which  
3 is: Is the company thinking through carefully the  
4 business it's in and taking advantage of the -- both the  
5 -- the resource endowments it has got and the market  
6 opportunities it has? And I feel it is, and -- but there  
7 are areas for improvement, as there are, in my  
8 experience, in all organizations.

9 MR. ANTOINE HACAULT: So when it looks at  
10 the risks, and we've seen a SWOT, S-W-O-T, an analysis of  
11 all the risks and how high those risks are, medium, the  
12 impact of those risks, was it your view that Manitoba  
13 Hydro had a good grasp on all the major risks that it was  
14 facing?

15 MR. JUDAH ROSE: Well, again, you know,  
16 my assignment was focussed in on a subset of -- of the  
17 risks. I didn't look at all of the risks that the -- the  
18 company had.

19 If I look at page 104 of my PowerPoint,  
20 you know, my -- my terms of reference were to -- to look  
21 in particular not only at risks in general, but in  
22 particular in the drought and those related to the  
23 exports. And as you can see here, there are a number of  
24 issues that the Company looks -- looks at, which I in  
25 many cases either didn't look at at all or looked at very

1 -- in a very limited way, for example, Aboriginal issues.  
2 I didn't do anything on that.

3                   But with that caveat, and that's the  
4 reason I included this slide, is that there is a low  
5 probability, high-risk event associated with the drought  
6 in terms of the -- a drought worse than the worst on  
7 record and the inevitability of -- of droughts -- and in  
8 the context of the export sales, and that's what I was  
9 focussed in on. And the Company's not perfect, but no  
10 company's perfect. Overall, I was impressed, and I'd  
11 recommended some areas for improvements.

12                   I will say that the area of mid-office  
13 capabilities, the -- the checks and balances that are --  
14 that are the goal of the -- the mid-office activity, one  
15 that's, you know, evolved over the last ten (10) or  
16 fifteen (15) years in particular, and the Company is --  
17 is -- I guess in my understanding, it's -- it's  
18 continuing to make some improvements in that area.

19                   MR. ANTOINE HACAULT: Thank you. Now,  
20 with respect to the issues of appropriately managing  
21 export and drought risks because that was one (1) of the  
22 issues that is the first scoping issue, I'd like you to  
23 draw -- or to draw your attention to long-term export  
24 contracts.

25                   We've had some discussion with respect to

1 this, but I've seen in your CV some confidential  
2 arbitrations on contracts. What would you say is your  
3 level of knowledge with respect to what might be  
4 reasonably included in standard, if there is that kind of  
5 a word, contracts for power?

6 MR. JUDAH ROSE: Well, I mean, you know,  
7 I mean, there are some standard contracts for short-term  
8 transactions. The longer-term transactions tend to be  
9 fairly structured to the actual transaction itself, and  
10 so, you know, the more typical transaction involves the  
11 fossil units where you're renting the fossil units. Here  
12 you're actually delivering power, and it's fairly unique  
13 because, as we've been discussing, it's hard to get power  
14 at a price without having a big collateral consequence, a  
15 need for a lot of collateral.

16 So there are some general features, but  
17 there are also some specific features. And so that's the  
18 type of experience and expertise I'm trying to bring to  
19 bear as I look at the contract -- contractual situation.

20 MR. ANTOINE HACAULT: Yes. My first  
21 question is: In your view, is there a fairly good level  
22 of expertise within Manitoba Hydro to deal with its  
23 contract negotiations?

24 MR. JUDAH ROSE: Yes. And, you know, the  
25 -- the Corporation has a lot of experience given its size

1 in the sense that it's the -- has the highest percentage  
2 of exports relative to the other corporations in Canada,  
3 for example. And it's been doing this now for several  
4 decades. And I believe it is benefiting from the  
5 experience that it's -- it's gaining in that area.

6 MR. ANTOINE HACAULT: Okay. In your  
7 view, having resi -- reviewed the term sheets and seen  
8 the processing leading to those term sheets, is Manitoba  
9 Hydro personnel seeking out appropriate information  
10 that's required to make its long-term decisions?

11 MR. JUDAH ROSE: Yes.

12 MR. ANTOINE HACAULT: Do you have any  
13 recommendations or suggestions in improving the  
14 information that they're getting or the method in which  
15 they're proceeding to evaluate their risks in concluding  
16 purchase prices and sale prices?

17 MR. JUDAH ROSE: Well, you know, there  
18 are some recommendations with respect to the modelling  
19 and assessment of hedging that -- and particularly in a  
20 situation once they get into a drought and they're --  
21 they're working on managing the risk of that.

22 And -- but in terms of the long-term  
23 contracting, I was overall quite impressed with the --  
24 the way the organization is functioning and -- my -- my  
25 recommendations for improvements notwithstanding.



1                   This is especially true when coupled  
2                   with risk-mitigation strategies pursued  
3                   by Manitoba Hydro discussed elsewhere  
4                   in the report."

5                   And I feel it's a good statement of my  
6                   opinion sitting here today.

7                   MR. ANTOINE HACAULT:    Okay.  Does it  
8                   continue to be your opinion, sir, that relying only on  
9                   short-term rates would be undesirable because of the  
10                  volatility?

11                  MR. JUDAH ROSE:    Yes, we had a little bit  
12                  a colloquy, Chairman Lane and myself, with respect to the  
13                  possibility of building export LNG facilities, which are  
14                  capital intensive.  And I indicated that the critical  
15                  element there is -- is getting contracts to make that  
16                  happen.

17                  All the more so in this particular case  
18                  when there are acceleration investments or change in  
19                  investment -- vestments that are -- are required, so  
20                  there are -- they were -- there were capital  
21                  consequences.  But even more so, as I indicate here with  
22                  respect to the transmission investment, that were Canada  
23                  to surrender its sovereignty and subject itself to FERC  
24                  jurisdiction, which it doesn't want to do and I'm sure is  
25                  not appropriate to do, the transmission issue would go

1 away.

2                   And it's important to recognize that they  
3 are -- you guys are in a situation in which you're very  
4 much involved necessarily with the United States but not  
5 subject to the transmission authorities, FERC, which  
6 would solve the transmission problems by requiring the  
7 transmission investment, but to get the transmission  
8 investment you've got to go forward with these long-term  
9 contracts. And you get to take advantage of the fact  
10 that the United States is socializing the costs of the  
11 contracts.

12                   So it's a doubly important situation vis-  
13 a-vis a non-obvious consequence of the international  
14 character of Manitoba Hydro's operations.

15                   MR. ANTOINE HACAULT: Thank you. I'll  
16 have some more questions with respect to the issues and  
17 benefits and problems with the transmission issues, but  
18 before getting into that I'll address some additional  
19 contract issues.

20                   Sometimes in investments we see staggering  
21 of investments. In your report at pages 128 and 129 --  
22 now, do you have any observations as to whether Manitoba  
23 Hydro has acted prudently or reasonably with respect to  
24 this staggering of expiration dates of the contracts?

25                   MR. JUDAH ROSE: I -- I believe it's

1 acted prudently and wisely to stagger.

2 MR. ANTOINE HACAULT: Okay. And whether  
3 -- what other aspects has it acted prudently and wisely  
4 with respect to these contracts, specifically with  
5 respect to buyers? Has it contracted with only one (1)  
6 buyer?

7 MR. JUDAH ROSE: No, it's contracted with  
8 multiple buyers. The ones that are on the ground nearby  
9 and who are quite creditworthy by virtue of the monopoly  
10 franchises that the states have given to these companies.

11 MR. ANTOINE HACAULT: And do you have any  
12 comments on whether Hydro has acted prudently or  
13 reasonably with respect to the indexing of the pricing of  
14 some of these contracts?

15 MR. JUDAH ROSE: Yes, they -- they've  
16 taken advantage of the diversity that's available and I  
17 think it's -- I think they've taken advantage of the fact  
18 that their counterparties may want something and they may  
19 have -- they may be able to take -- take -- take  
20 advantage of that as well. So it's diverse. It -- I  
21 think it makes sense and I think it's been a -- been a  
22 good feature of their contracting strategy.

23 MR. ANTOINE HACAULT: So in your report  
24 you do note that there's diversity in the long-term firm  
25 pricing formulas, some being indexed to market prices and

1 others indexed to inflation. Why would that be an  
2 advantage?

3 MR. JUDAH ROSE: There can be significant  
4 divergences between the two (2) and I think it's useful  
5 to -- both of them are useful. You know, in terms of the  
6 buyers, if the contracts divers -- divert too much from  
7 market, they may have a tendency -- they may have a  
8 desire to abrogate the contracts. And the contracts are  
9 enforceable, they're creditworthy counterparties, but why  
10 -- why have that situation there.

11 So having -- but at the same time you also  
12 want to have some predictability and -- and I think  
13 inflation has at least some predictability subject to the  
14 imperfections of central banking, but it has some  
15 predictability.

16 So I think it's a win-win for the parties  
17 and I think that those are the two (2) areas that are  
18 most common for the indexing. It's either the market --  
19 or maybe three (3) areas -- the market, the costs, or the  
20 -- or just general inflation indices.

21 MR. ANTOINE HACAULT: Thank you. Now,  
22 I'd like to get into the issue of transmission lines, and  
23 something, quite frankly, I don't understand is  
24 socializing the costs of transmission. I don't -- I'm  
25 not familiar with that term, could you enlighten me?

1 MR. JUDAH ROSE: Yes. Socialization  
2 refers to the fact that the line might not be paid for by  
3 the Utility that's building the line. And the reason  
4 that that's considered is because in an integrated  
5 transmission network everyone benefits by having another  
6 line, that's almost a definitional outcome of having a  
7 network. A network becomes more redundant and strong.

8 And so what's happening is is that there's  
9 a concern in the United States that there's a significant  
10 under investment in transmission. And -- and part of the  
11 significant underinvestment is related to the fact that  
12 there's not sufficient recognition in the cost allocation  
13 procedures with respect to who are -- who's getting the  
14 benefits.

15 So there is a transition that's occurring  
16 in MISO and -- and across the United States related to  
17 FERC, Order 8/90, and the June 17th, 2010, notice of  
18 proposed rule making to modify Order 8/90 which relates  
19 to transmission planning to socialize and, therefore,  
20 reduce the dollar costs of the transmission upgrades that  
21 we've been talking about to the counterparties.

22 MR. ROBERT MAYER: Sort of -- sort of  
23 like socialized medicine for electricity.

24 MR. JUDAH ROSE: You know, I have uncles  
25 who are doctors, but I -- I don't really know that much

1 about medicine. But -- okay.

2 But you know, it -- I think we all could  
3 sort of see why having a -- you know, more transmission  
4 lines is good, and again one (1) of the big problems has  
5 been there's been significant underinvestment.

6 So the Company gets to take advantage of  
7 that process because the counterparties are not paying  
8 for their transmission, as -- they may pay a fraction of  
9 it. And at the same time, that's good but I think, you  
10 know, the key alternative here to -- to think about,  
11 again as I mentioned, would be -- is there wouldn't be a  
12 transmission problem that I've been harping on through  
13 these days were Canada to subject itself to the  
14 sovereignty of the United States, which I'm not  
15 recommending.

16 And all I'm saying is is that that is the  
17 situation that's the counterpoint here, which is this  
18 problem wouldn't exist. We have sort of a seems issue.  
19 And so I think the main point here is is that care needs  
20 to be taken to understand that it's a complicated  
21 situation when you're dealing with these international  
22 transactions that -- because they facilitate the  
23 transmission that's necessary to secure the province.

24

25 CONTINUED BY MR. ANTOINE HACAULT:

1 MR. ANTOINE HACAULT: Now, sometimes I  
2 just understand these in kind of a very simple way.  
3 We're talking about putting Bipole 3 and doing a whole  
4 bunch of transmission up to the border.

5 Am I simplifying things too much to say,  
6 and this is certainly what -- not what happens in the  
7 real world, but that Canada's transmission highway is  
8 like a nice six (6) lane highway which would come up to  
9 the border, and the beautiful thing about these two (2)  
10 term sheets that will get us the extra transmission is  
11 that we're not going to be limited to having a two (2)  
12 lane highway once we cross the border.

13 MR. JUDAH ROSE: Okay, I'll -- I'll try to  
14 one-up you. So you know, so it's like a bridge to  
15 nowhere. You know, you got -- you -- you want to get  
16 more security -- excuse me?

17 So I mean, you -- you don't want to have a  
18 situation where you're act -- acting to solve your side  
19 of the border's problem and -- but you don't control  
20 what's going on on the other side, and one (1) way to  
21 manage that is through the contracts.

22 MR. ANTOINE HACAULT: So that we've  
23 heard, I think, through Hydro witnesses and through you  
24 that the -- two (2) of the term sheets will actually, and  
25 this was part of Board counsel's questioning, have linked

1 with those term sheets extra transmission capabilities  
2 south of the border to enhance Manitoba Hydro's security,  
3 both for import and exports. Is that correct?

4 MR. JUDAH ROSE: Yes, sir.

5 MR. ANTOINE HACAULT: And it is important  
6 to ensure those term sheets go through because without  
7 long-term supply and sufficient capacity being given, and  
8 energy being given, it is unlikely that the third parties  
9 in your beautiful county will want to make such a big  
10 investment in the infrastructure. Is that correct?

11 MR. JUDAH ROSE: Yes, that's my concern  
12 with -- well, let me just amplify on that. You know, the  
13 -- Manitoba has for decades been part of the various  
14 different arrangements in the United States with Mid-  
15 American Power Pool, now with MRO, and -- and NERC, et  
16 cetera, and there's a spec -- there's -- there's a  
17 distinction when you get to the border.

18 And that -- that coordination  
19 notwithstanding, and so I think it's incumbent upon the  
20 people on the north side of the border to do their share,  
21 and also for the people on the south side of the border  
22 to cooperate, and I think the vehicle for that is the --  
23 the contracts, as best as I can understand it, given the  
24 international legal situation.

25 MR. ANTOINE HACAULT: Now, I don't

1 understand too much about the US markets. Does this open  
2 up some markets for us, this extra transmission, or is  
3 that not something that's within one (1) of the potential  
4 benefits?

5 MR. JUDAH ROSE: Well, I mean, it's more  
6 -- I think about it more in that you're getting more  
7 quantity, and that's going to be there forever, right?  
8 And -- not forever, but the transmission system is -- is  
9 there for a long time.

10 And you secure what you have. Right now,  
11 there's a serious problem, and it's a -- it's a known  
12 problem for people in the know and with respect to the --  
13 the reliability and security of existing north-south  
14 transfers. And so it's something that needs to be  
15 secured further to protect the export capabilities that  
16 you have.

17 MR. ANTOINE HACAULT: Thank you. We  
18 talked about socializing some of these transmissions. Do  
19 you know for sure that that is happening? And I guess my  
20 question is: What's your knowledge of the extent to  
21 which that will happen?

22 MR. JUDAH ROSE: I -- I don't think it's  
23 been finalized that -- there's -- there's two (2) levels  
24 of socialization. The first is avoiding 2 million -- \$2  
25 billion of investment on the part of the ratepayers of

1 Manitoba via the Corporation that's going to be  
2 associated with the construction of the lines that would  
3 be paid for by the US counterparties. The second level  
4 of socialization -- among the parties.

5 But the second level of socialization is  
6 that people in Indiana would be charged for the lines in  
7 part, potentially, or anyone in MISO would be charged for  
8 the lines. That's the second level of socialization as  
9 opposed to just MP or WPS.

10 That's the definite direction of FERC, the  
11 policy and regulatory commission that's responsible for  
12 transmission in the United States, the -- the cost  
13 allocation. I think it's likely, but the exact extent of  
14 that has not been finalized.

15 MR. ANTOINE HACAULT: Thank you. Just  
16 for the information of the Board, I had several more  
17 detailed questions about the flexibility in the new  
18 contracts with respect to dealing with a drought. I'm  
19 going to try and avoid duplication as much as possible,  
20 but there are some points which I think I still need to  
21 deal with.

22

23

(BRIEF PAUSE)

24

25 MR. ANTOINE HACAULT: I'm going to switch

1 subjects a bit and talk a little bit about the nature of  
2 hydraulic energy and look at the risks and benefits of  
3 the new long-term contracts. I'm going to go through a  
4 number of things that might be seen as benefits, and then  
5 a number of things that might be seen as risks, and then  
6 ask whether they have all been considered in setting  
7 rates.

8                   So starting first with the benefits of new  
9 long-term contracts, would you agree that it would be an  
10 advantage to be -- to have a long-term contract so as to  
11 better match the construction costs of the facility and  
12 the price for export, maybe not very clear about that.  
13 If you're looking to build something it's better to have  
14 a long-term contract than a short-term contract where you  
15 don't know what your revenue will be in the long-run.

16                   MR. JUDAH ROSE: Yes, as a general  
17 matter, we -- we discussed the -- the long-term contracts  
18 as part of the strategy make sense. One (1) aspect of it  
19 is the -- the fact that you know in advance what you're  
20 going to be getting to a certain degree, the other is is  
21 that it allows for amortization over a longer period of  
22 time, and that's going to be attractive to the -- to the  
23 cou -- to the counterparty.

24                   MR. ANTOINE HACAULT: I believe you've  
25 indicated that, in your view, at least the initial prices

1 were higher in the long-term contract, the negotiated  
2 price, than the spot-market price that we are seeing  
3 today. Is that another advantage?

4 MR. JUDAH ROSE: As a general matter, the  
5 long-term contracts inherently have the -- higher prices,  
6 or are expected to have higher prices, by virtue of the  
7 fact that it allows the counterparty to avoid having to  
8 construct a power plant to meet their reserve margin  
9 requirements. And so, all else being equal, you would  
10 expect those prices to be higher.

11 MR. ANTOINE HACAULT: Now, you've gone  
12 through the term sheets. In your view, do the terms and  
13 conditions of those term sheets provide more flexibility  
14 to Manitoba Hydro in the case of the worst drought on  
15 record when compared to not having those contractual  
16 provisions?

17 MR. JUDAH ROSE: Yes, I believe they do.

18 MR. ANTOINE HACAULT: Would you agree  
19 with me that the long-term term sheets and potential  
20 contracts also avoid par -- possible market trends?

21 MR. JUDAH ROSE: The -- one of the  
22 features of long-term contracts is it -- it reduces the  
23 variance upo -- of revenues because you're not as exposed  
24 to the short-term market, which -- which tends to be un -  
25 - uncertain.

1 MR. ANTOINE HACAULT: Now, there are a  
2 number of risks associated with long-term contracts.  
3 Would you agree with that statement?

4 MR. JUDAH ROSE: Yes, there are -- there  
5 are risks associated with long-term contracts. You know,  
6 overall, I feel like they're a risk managing tool, but  
7 there are risks.

8 MR. ANTOINE HACAULT: Okay. One of those  
9 risks might be that it would underestimate -- or Manitoba  
10 Hydro might underestimate the Manitoba domestic demand;  
11 is that correct?

12 MR. JUDAH ROSE: Yes, it's a -- it's a  
13 possibility that the demand could be higher than  
14 expected.

15 MR. ANTOINE HACAULT: But that could  
16 swing both ways?

17 MR. JUDAH ROSE: Yes. So if you have  
18 less demand, you have more to sell.

19 MR. ANTOINE HACAULT: There's also --  
20 would there be any kind of transmission risks involved  
21 with respect to either congestion, current locational  
22 marginal pricing?

23 MR. JUDAH ROSE: Hold on one (1) sec.

24

25

(BRIEF PAUSE)

1 MR. JUDAH ROSE: I think, you know, my  
2 understanding is that the -- under the term sheets, that  
3 the congestion pricing risk is borne by the  
4 counterparties. MR. ANTOINE HACAULT: So that, in  
5 fact, for this -- these terms sheets represents an  
6 advantage of having the long-term contract, because they  
7 were able to negotiate that risk away.

8 Is that correct?

9 MR. JUDAH ROSE: Yes, I think that's  
10 fair.

11 MR. ANTOINE HACAULT: Now, would there be  
12 what I would term an infrastructure risk? Let me  
13 explain.

14 If you sign a term sheet, I would believe  
15 you would assume specific operation dates for the hydro  
16 expansion project. A delay in construction could force  
17 Manitoba Hydro to run fossil fuel units which would cost  
18 more than the price received on the export.

19 I'm not saying that would be the only or -  
20 - situation; I'm just pointing out is that a risk that's  
21 created by the term sheet?

22

23 (BRIEF PAUSE)

24

25 THE CHAIRPERSON: We're just going to

1 take a short break.

2

3 --- Upon recessing at 3:33 p.m.

4 --- Upon resuming at 3:58 p.m.

5

6 THE CHAIRPERSON: Okay, Mr. Hacault.

7 MS. PATTI RAMAGE: Mr. Hacault, if I  
8 could maybe -- I believe the last question was dealing  
9 with -- it was construction delays and the risks  
10 associated with that. And the reason for our little  
11 meeting with the back row was the term sheets do have  
12 conditions precedent to deal with those sort of things,  
13 but we're not at liberty to disclose the exact nature of  
14 it.

15 Suffice it to say though that the series  
16 of conditions precedent that are in the term sheet are  
17 such that certainly at this point we wouldn't be dealing  
18 with construction delays and for some time out, because  
19 there's different -- a series of different approvals that  
20 have to go through. One (1) that we have put on the  
21 record is regulatory approval, so that's always out. And  
22 then there's further condition precedents.

23

24 CONTINUED BY MR. ANTOINE HACAULT:

25 MR. ANTOINE HACAULT: To take it, Mr.

1 Peters (sic) -- so I take it that although we aren't able  
2 to know exactly what it is there was a risk and Manitoba  
3 Hydro has considered that risk and in its -- in its view  
4 dealt with that risk adequately.

5 Is that a fair statement?

6 MR. JUDAH ROSE: I think maybe the fairer  
7 statement is that there are risk mitigation provisions in  
8 the term sheets that I reviewed related to that issue.  
9 They don't eliminate risk but they mitigate it.

10 MR. ANTOINE HACAULT: Thank you. Another  
11 risk, and it goes both ways, is that you might  
12 underestimate or overestimate actual costs.

13 Is that correct?

14 MR. JUDAH ROSE: That's a -- a risk in  
15 construction, yes.

16 MR. ANTOINE HACAULT: And as relates  
17 long-term contracts, again, system infrastructure failure  
18 is a risk but as I understand it there are some  
19 provisions that deal with that risk.

20 Sorry, I thought -- just because I was  
21 blowing too much hot air here that one (1) of the board  
22 members had to take his coat off.

23 MR. JUDAH ROSE: There -- I'm just  
24 looking for the page in my report that addresses that  
25 issue. I'm not finding the reference in here, but there

1 are mitigations related to infrastructure risk that are  
2 described in some of my materials here. I'm not -- I'm  
3 not finding it right now, but there are -- are  
4 mitigation.

5 MR. ANTOINE HACAULT: Okay. Thank you.  
6 Now, I'm not sure I'm going to be able to word this  
7 exactly so that I can avoid a long discussion, but is it  
8 your opinion, sir, that based on the information  
9 available to Manitoba Hydro at the time of the relevant  
10 negotiations of the term sheets, that Manitoba Hydro has  
11 acted prudently and reasonably, resulting in at least a  
12 reasonable, negotiated term and condition sheets in each  
13 of the three (3) instances?

14 MR. JUDAH ROSE: Yes, sir, that is my  
15 opinion, and I apologize, but I did want to mention that  
16 some of the things I was discussing in the answer to the  
17 previous question are on pages 96 and 97. But to your  
18 question, I -- I do think that they've acted reasonably  
19 and prudently.

20 MR. ANTOINE HACAULT: Okay. Now, as you  
21 may know we aren't into NFAAT, or should we build  
22 Keeyask, or should we not build Keeyask, or should we  
23 build Conawapa or should we not build Conawapa; this  
24 hearing's about rates, and what the rates should be, and  
25 what any rate increases should be.

1                   Now, am I correct in understanding, sir,  
2 that you and your company in this report, the September  
3 report, was not asked whether or not it was prudent to  
4 build Keeyask or Conawapa?

5                   MR. JUDAH ROSE:    That wasn't the specific  
6 terms of reference.  It only became an issue as a  
7 consequence of the relationship between the contracts and  
8 the required infrastructure.

9                   MR. ANTOINE HACAULT:   So you weren't  
10 asked to fully study that, and fully comment on those  
11 particular construction projects, were you, sir?

12                   MR. JUDAH ROSE:    No, not directly, but  
13 indirectly, as I -- as I indicated.

14                   MR. ANTOINE HACAULT:    Okay.  Thank you.  
15 Now, I'd ask you to go to page 24, and then leading onto  
16 the top of page 25 of your September report.

17                   At this particular section, you're  
18 discussing the risk management plan, and at the top of  
19 page 24 you were referring to a number that Hydro had  
20 given of 2.7 to \$2.8 billion potential financial impact  
21 of the cost of an extended five (5) year drought.

22                   Now, what is of interest to me is the  
23 discussion that you had with Mr. Williams.  And he asked  
24 you a couple questions with respect to whether you  
25 thought that the new term sheets had significant

1 provisions in it which allowed to mitigate the potential  
2 losses in a five (5) year drought, and I believe your  
3 answer was, "Yes".

4                   Now, am I reading this correctly that  
5 you're recommending to Manitoba Hydro first that it do a  
6 recalculation -- well, now let's look at the current  
7 circumstances, because if we hit a drought it's going to  
8 be in the future -- with all the mitigating circumstances  
9 of these term sheets to see if this \$2.7 billion amount  
10 is still an accurate assessment?

11                   MR. JUDAH ROSE: No -- you know, I think  
12 that the -- the issue I think that I would -- in -- as I  
13 with -- go back to that testimony was is that the --  
14 these term sheets didn't generally take effect during the  
15 period of time that was analyzed. And so the -- the five  
16 (5) year effect was focussed in on the period of time  
17 leading up to 2015.

18                   So -- so, I think -- but as a general  
19 matter, you know, continuing to review the consequences  
20 of -- of a drought is something that the company should  
21 continue to do.

22                   MR. ANTOINE HACAULT: I'm not so sure I  
23 understand. So do the new provisions in the term sheets  
24 have any impact on this two point eight (2.8) number that  
25 we're looking at, \$2.7 billion number?

1                   MR. JUDAH ROSE:    I think that is, if you  
2 would simulate the effect of a draught with the new terms  
3 and conditions, I think, under certain circumstances, you  
4 would see less of an effect with the new terms and  
5 conditions relative to existing contracts.  And that's  
6 what I have to say on that.

7                   MR. ANTOINE HACAULT:    So, to your  
8 knowledge, has this new analysis been done?  Has anybody  
9 tried to simulate what's going to happen under the new  
10 term sheets?  Are we really talking about negative  
11 effects in the magnitude of \$2.7 billion, or is it  
12 something less now?  Or is it something more?  I don't  
13 know what the answer is.  Has anybody done this exercise?

14                  MR. JUDAH ROSE:    I haven't seen a study  
15 that covers the period of time covered by the term  
16 sheets.  I think one (1) of the main things that we were  
17 focussed in on is -- is that the -- the drought threat  
18 generally is mitigated under the new -- new arrangements,  
19 and to my knowledge the -- the analysis I know has been  
20 updated by about a year or two (2), so there might be  
21 some coverage of one (1) of the new contracts, but I  
22 haven't seen an analysis that covers, you know, 2025, for  
23 example.

24                  MR. ANTOINE HACAULT:    I may be, in my  
25 mind, stating the obvious, but if we're talking about

1 risks in the future, wouldn't it be prudent to know what  
2 the real number is under contracts that will govern that  
3 time period?

4 MR. JUDAH ROSE: I think it's helpful to  
5 know, but, you know, because the contracts are  
6 additionally protective, your effects are going to be  
7 less, and so I think at least directionally you know that  
8 it's not going to increase the stress. It's -- and I  
9 think that this is a pretty reasonable way to go about  
10 stressing the company's financial performance.

11 MR. ANTOINE HACAULT: Now, the third area  
12 in the scoping was: Do Hydro -- Hydro's decision-making  
13 criteria reflect a risk-reward tolerance criteria that is  
14 acceptable to Hydro ratepayers and the Board? And you've  
15 mentioned in your report, at -- in the area of pages 99  
16 to 100, some of Hydro's operational priorities, and  
17 you've quoted one (1) of them under the heading 7.2 -- or  
18 7.3.2.1, Storage Drawdown, and I'm quoting:

19 "Adequate energy reserves in reservoir  
20 storage will be maintained. These  
21 reserves must be sufficient to meet  
22 firm load requirements, given a repeat  
23 of the worst historic flow conditions,  
24 coincident with firm load demands  
25 associated with severe winter weather

1 conditions, recognizing the  
2 availability of thermal and import  
3 energy supplies."

4 In your opinion, sir, is that a reasonable  
5 way to approach the risk tolerance for this Crown  
6 utility?

7 MR. JUDAH ROSE: Yes, I think that's an  
8 important element of what they should be doing. And I  
9 think it's reassuring to know that they -- the system  
10 operational priorities are -- are what they are and that  
11 they're written out.

12 MR. ANTOINE HACAULT: I'd categorize them  
13 as fairly conservative and not very aggressive, in the  
14 sense of not putting Manitoba ratepayers at too much  
15 risk.

16 Would you agree with that suggestion?

17 MR. JUDAH ROSE: Yes, it's -- I would  
18 agree with that, and it's reassuring.

19

20 (BRIEF PAUSE)

21

22 MR. ANTOINE HACAULT: Now, sir, just one  
23 (1) point again going back to these drought estimates.  
24 Could you go to page 66 of your PowerPoint. It's, as I  
25 understand it, of -- it's entitled, "A Variation of Flow

1 Related Revenue."

2 Have you found that page?

3 MR. JUDAH ROSE: Yes, sir.

4 MR. ANTOINE HACAULT: Now, am I correct  
5 in understanding that this calculation again was done on  
6 the base page, which does not consider the mitigation  
7 terms in the new term sheets that have been negotiated by  
8 Manitoba Hydro? And it may need help from the back row,  
9 I'm not sure.

10 MR. JUDAH ROSE: Yeah. Tha -- that's my  
11 understanding, that it is analyzing periods of time  
12 before the -- the significant effect of the new term  
13 sheets.

14 MR. ANTOINE HACAULT: The one (1) thing  
15 that I'd like to bring you back to is that the last  
16 sentence on page 24 leading to the top sentence on page  
17 25 of your report, and I'll just read it for the record.

18 "For example, one analysis could be if  
19 the 2003-04 drought were repeated but  
20 the proposed contract terms and  
21 conditions were in place with the blank  
22 decrease in firm volume provisions,  
23 what would have been the loss incurred  
24 at the company and how much market  
25 purchases would have been required?"

1                   Now, is that something that you think is  
2 worthwhile doing? We're looking at some swings here, but  
3 these swings don't take into account all the mitigation  
4 terms that Manitoba Hydro has put in place. And Mr.  
5 Williams went through a number of favourable things that  
6 have changed since this particular variation of flow  
7 related revenue is generated.

8                   In your opinion, would it be worth redoing  
9 this but with the new term sheets?

10                   MR. JUDAH ROSE: You know, there might be  
11 some utility in that. I -- I think that -- where I think  
12 the biggest issue might -- the great -- greatest benefit  
13 would come is a situation in which you actually look at  
14 simulating something outside the historical record versus  
15 -- and you look at it, think would be the consequences  
16 for the company with and without the contractual  
17 situation. And I think you would do it sort of  
18 recognizing it's hard to guess at what exactly that flow  
19 is, but just to illustrate the dynamics.

20                   And I think they have -- in my mind, the  
21 company has thought that through qualitatively. And the  
22 incremental benefit of -- of looking at that  
23 quantitatively is -- it might help and -- but I think it  
24 would -- where it would -- will help the most would be is  
25 if you are in a -- in a drought situation to -- to be

1 looking at that quantitatively, like in the second year  
2 of a drought or whatever and -- or as you're -- you're in  
3 there and you need to communicate externally as -- and  
4 internally.

5 MR. ANTOINE HACAULT: Okay. Sir, we're  
6 going to be putting a lot of attention in this hearing to  
7 the -- I'm going to say the negative swing and the  
8 possible extreme events.

9 Would you expect that it would be  
10 desirable to look not only at the negative, but how that  
11 projects out into the future? In other words, I see on  
12 this graph a whole bunch of lines on the top. We never  
13 seem to be talking about that and -- and where that's  
14 going to leave us.

15 Is that kind of a discussion something  
16 that you think is worthwhile having?

17 MR. JUDAH ROSE: Yes, I think to a  
18 certain degree we have had some of that discussion in the  
19 sense that we have highlighted the fact that the company  
20 has benefited from its hydro endowment by having the  
21 lowest rates in North America. But I do think that you -  
22 - that you have to avoid extremes in the sense of avoid -  
23 - just looking at the downside, you might have ten (10)  
24 years of -- of good condition and one (1) year of not-so-  
25 good condition and you need to look at the totality of

1 it.

2                   You want to be concerned about the -- the  
3 negative because there are ratepayers for whom the rate  
4 consequences can be disproportionate on the dow -- when  
5 the rates go up, but I do think a balanced view is  
6 critical.

7                   And again, it's a -- it's a fairly unique  
8 situation in my experience across North America, and so  
9 particular attention needs to be given to both the up and  
10 the downside of a -- of a very positive resource  
11 endowment.

12                   MR. ANTOINE HACAULT: Thank you, sir,  
13 it's been a pleasure having your input on these issues.

14                   And those are all my quest -- questions,  
15 members of the Board. And I'm pleased to report that I  
16 underestimated my time.

17                   THE CHAIRPERSON: Thank you, sir.  
18 Overestimated you mean. Mr. Gange, for...

19

20                   (BRIEF PAUSE)

21

22                   THE CHAIRPERSON: We experience a lot of  
23 technol -- technological problems with these.

24

25                   (BRIEF PAUSE)

1 CROSS-EXAMINATION BY MR. BILL GANGE:

2 MR. BILL GANGE: Thank you. Mr. Rose, I  
3 will attempt to be as brief and direct as I possibly can  
4 given the feeding nature of all of us at this point.

5 Your evidence yesterday in your discussion  
6 with Mr. Peters was that one (1) of the options with  
7 respect to Manitoba Hydro, and dealing with drought and  
8 protecting itself, is the potential ability to diversify.  
9 And -- and do you recall you -- you -- you had said to  
10 Mr. Peters that yeah, there's -- it's one of the options  
11 but at the same time with respect to thermal plants  
12 there's a significant supply just south of the border in  
13 terms of thermal plants.

14 Do you recall that discussion, sir?

15 MR. JUDAH ROSE: Yes, and by reaching out  
16 to it you're effectively maximizing your diversification.

17 MR. BILL GANGE: So that in terms of  
18 building thermal plants, from your perspective, probably  
19 the better thing to do would be to import rather than to  
20 incur those startup costs.

21 MR. JUDAH ROSE: That's -- that's my  
22 conclusion and it's -- it's related to the fact that, you  
23 know, you're accessing literally potentially thousands of  
24 power plants once you -- once you hook into the eastern  
25 interconnect, which is the largest synchronous grid in

1 the world.

2 MR. BILL GANGE: You also have -- have  
3 mentioned in your material that right now there's -- in  
4 the United States there's -- there's a situation where  
5 it's highly unlikely, given the current political  
6 situation, that any new coal plants are on the near  
7 horizon and -- and perhaps aren't on any horizon. Is  
8 that correct, sir?

9 MR. JUDAH ROSE: Yes, particularly to get  
10 a permit for a unit that's not permitted today, that's  
11 extremely difficult. It may not be as difficult but --  
12 in the future, but it will remain difficult in my  
13 opinion.

14 MR. BILL GANGE: You also mentioned that  
15 -- that with respect to construction of -- of natural gas  
16 thermal plants, that one (1) of the obstacles to such a -  
17 - a decision is the price volatility involved with  
18 natural gas.

19 MR. JUDAH ROSE: Yes.

20 MR. BILL GANGE: So that when -- when I  
21 hear that I -- I -- I liken the price volatility of  
22 natural gas in some ways to the -- the potential  
23 unpredictability of water flows in -- in a hydro  
24 situation.

25 That's -- the -- the corresponding

1 downside in a hydro situation is drought, would -- would  
2 you agree with that?

3 MR. JUDAH ROSE: Well, not from the  
4 perspective of the -- the counterparty. I don't think I  
5 could agree with that. That is, they're going to get a  
6 price at greater than eighty-seven (87). It would have  
7 to be a very, very unusual event for them not to be  
8 getting the power, and so that's different than the fact  
9 that every -- every year there's this extreme volatility  
10 in the natural gas price.

11 MR. BILL GANGE: Yes, and -- and not --  
12 not necessarily to the counterparty, but to the party  
13 constructing the -- the project. There -- there's always  
14 a risk and -- if you're building a dam there's a risk  
15 that -- that you're not going to have enough water. If  
16 you're building a thermal gas plant there's a risk that -  
17 - that the volatility is going to be quite excessive.

18 MR. JUDAH ROSE: I mean, there's --  
19 there's definitely risks to the -- to the -- to the hydro  
20 situation that the Company has, and there's risks to  
21 constructing anything. There's no way to avoid all  
22 risks. That's not something that we -- maybe in the next  
23 life we can get there, but we can't get there here.

24 MR. BILL GANGE: Thank you, sir. At page  
25 45 of your original report, you had made the comment that

1 -- that CO2 regulations raise prices but not the costs of  
2 a hydro-electric generation. Renewable portfolio  
3 standards can create competition from local options with  
4 lower transmission costs, such as wind, nuclear, DSM, et  
5 cetera. And -- and my understanding is, sir, that you've  
6 indicated that the states in the MISO region, and perhaps  
7 all of the states in -- or -- or a large percentage of  
8 the states in the United States are adopting renewable  
9 portfolio standards.

10 Is that correct?

11 MR. JUDAH ROSE: Yes. Slightly more than  
12 half have either standards or goals, and there's an  
13 exhibit on the next page.

14 MR. BILL GANGE: Yes, and when I look at  
15 that exhibit, I -- I take it from that that that's the  
16 exhibit that you've attached there, Exhibit 2-18, to your  
17 original report, sets out the standards, the portfolio  
18 standards of the various states, many of them in the MISO  
19 region, with respect to renewable resources or sources of  
20 -- of power.

21 And -- and -- so that my -- my  
22 understanding of this, sir, is that these renewable  
23 portfolio standards, your view is that they create quite  
24 a significant opportunity for making hydro power very  
25 attractive to those states. Is -- is that a fair summary

1 of -- of your commentary?

2 MR. JUDAH ROSE: Yes, I think so, in --  
3 in the following sense, which is, when you go to a  
4 regulatory board, in my experience, in the United States  
5 and say, I am providing not just more gas, I'm now  
6 providing hydro power, that's going to be very positively  
7 received by that board, even if it doesn't manifest  
8 itself in a compliance with their explicit portfolio  
9 standards. And it may also meet the -- the portfolio  
10 standard requirement.

11 MR. BILL GANGE: And you -- you then also  
12 mention that there's -- MISO shows huge potential wind  
13 builds in its transmission queue, and you've shown that  
14 in Exhibit 2-19.

15 MR. JUDAH ROSE: Yes, I have -- I have  
16 that one.

17 MR. BILL GANGE: So that one (1) of the -  
18 - one (1) of the sources of power that -- that Hydro,  
19 Manitoba Hydro, will be competing with as time goes by is  
20 wind power, and then that's going to be increasingly so,  
21 sir?

22 MR. JUDAH ROSE: Yes. And so, for  
23 example, in the forecasts that my corporation provides,  
24 it already incorporates the effect of that competition,  
25 and -- and therefore it's something that's already been

1 incorporated, but it is something to -- to note as you --  
2 as you observe what's going on in the business.

3 MR. BILL GANGE: And -- and then, sir,  
4 with respect to the question of diversification, would it  
5 be your recommendation to Manitoba Hydro that -- that in  
6 terms of diversification, one (1) of the options that is  
7 open to it is the concept of wind builds?

8 MR. JUDAH ROSE: You know, it's an issue  
9 I really haven't examined in any detail, but, you know,  
10 as a general matter, the Company should look at its  
11 options. I really haven't looked at it in detail. It  
12 looks windy here, but most of my work is focussing on  
13 south of the border. I -- like I haven't seen the wind  
14 maps for this area. I'm concerned about the wind though,  
15 I'll tell you.

16 MR. BILL GANGE: But it -- but it -- and  
17 -- and I appreciate that, sir, that -- that you haven't  
18 done a detailed study. But does it make sense to you  
19 that -- that perhaps one (1) of the possibilities for  
20 diversification that -- that should be studied by  
21 Manitoba Hydro is wind builds?

22 MR. JUDAH ROSE: Yeah, we talked in -- in  
23 -- during my direct I -- I pointed out that one of the  
24 unusual phenomenon of this particular system is the large  
25 amount of storage it has. As a general matter,

1 electricity is not stored and -- so this is an unusual  
2 circumstance.

3                   And the company also has some reactive  
4 that -- not reactive, but quick-acting storage so that it  
5 can respond to the perturbations and wind output, and,  
6 accordingly, it is something that -- to the extent that  
7 that exists, it's something that makes the wind more  
8 attractive all else being equal.

9                   MR. BILL GANGE:    Well, I -- I take it  
10 from that answer, sir, that in fact al -- although you  
11 haven't studied the -- the Manitoba wind patterns and --  
12 and -- or -- or listened to anecdotal evidence of how  
13 windy it can be, but that -- that -- I -- I take it from  
14 that answer that it may be a situation of -- of combining  
15 hydro with wind would be -- would make the wind even more  
16 attractive than it otherwise would be because of the  
17 capability of storage of the hydro.  Is -- is that a fair  
18 restatement of -- of the comment that you made?

19                   MR. JUDAH ROSE:    It's a possibility that  
20 -- like -- like you said, that that's the case.  You  
21 know, one (1) -- one (1) of the problems that -- that,  
22 you know, MISO is facing is to the extent that -- and all  
23 -- all systems that have wind -- is it's in --  
24 intermittent and it stressed the operating reserve  
25 characteristics of the system.

1                   And one of the best ways to deal with that  
2 in terms of quick response is through hydro systems with  
3 storage, and -- and so it could well be that there's --  
4 there's a complementary aspect of it.

5                   MR. BILL GANGE:    One of the comments that  
6 you made at page 5 of your original report was that there  
7 is a risk -- I'm sorry, sir, I'm going -- I'll let you  
8 turn to page 5.

9                   MR. JUDAH ROSE:    Okay.

10                  MR. BILL GANGE:    But in -- in -- under  
11 the heading, "Securing firm export capability," you  
12 raised in your original report the fact that there's a  
13 risk that MISO might conclude that the current  
14 transmission system's export capabilities are not robust  
15 enough to consider Manitoba Hydro exports to be firm.

16                  I just am not sure, sir, of -- of the --  
17 the concern that you're raising there. Is that because  
18 of the potential of drought, or is it restricted to the  
19 potential of transmission of the power?

20                  MR. JUDAH ROSE:    It's the transmission  
21 that I'm referring to.

22                  MR. BILL GANGE:    Okay. And -- and is the  
23 transmission problem because of the -- the very lengthy  
24 path that the power has to -- to travel from northern  
25 Manitoba?

1                   MR. JUDAH ROSE:    It's the sparsity of the  
2 transmission between parts of Manitoba, but, in  
3 particular, between Manitoba and the United States, which  
4 is a known source of concern.  And I call to the  
5 attention of the Board that reliability was not mandatory  
6 in the United States until 2005, it was voluntary.  It is  
7 now mandatory in the United States for sure, and, also,  
8 as I understand it, in Canada as a consequence of the  
9 2005 Energy Policy Act.

10                   And as those reliability requirements kick  
11 in, and there are other developments as well, what may  
12 have been considered status quo may not -- may no longer  
13 be considered sufficient to achieve reliability  
14 accounting towards reserve margin.  And I've made that  
15 point several times.  It's a fairly subtle point related  
16 to the history of the industry, but it -- it's a si -- if  
17 -- if there's no additional transmission construction, my  
18 concern is is that the ability to export, which is  
19 already limited, would be even more limited.

20

21   (BRIEF PAUSE)

22

23                   MR. JUDAH ROSE:    And maybe I could just  
24 amplify.  There was original planned to be two (2) 500 kV  
25 lines going into the United States.  The second one was

1 never built. The consequences of that have not been  
2 fully drawn, and it's a good thing to get ahead of the  
3 curve on that one.

4 MR. BILL GANGE: Thank you.

5

6 (BRIEF PAUSE)

7

8 MR. BILL GANGE: And with that, sir, the  
9 -- the chart that you had about -- that I -- that we  
10 referred to on page 46 of the original report, which had  
11 the MISO interconnection queue.

12 MR. JUDAH ROSE: Yes, I see that.

13 MR. BILL GANGE: Yes, sir. And -- and  
14 showing quite a significant increase in terms of wind  
15 production during the years 2010, 2011, 2012. Would all  
16 of those programs and developments, sir, come with them  
17 new transmission capacities?

18 MR. JUDAH ROSE: Not necessarily. But  
19 first of all, a lot of this stuff didn't and may never  
20 get built, but clearly some is and it's indicative of a  
21 increased amount of wind production for sure. It is --  
22 it is possible to build wind and not have associated  
23 transmission with it.

24 And at the same time, and one (1) of the  
25 things I didn't mention in one of my early responses on

1 the socialization issue, is part of the reason the  
2 government is so anxious to socialize is to facilitate  
3 wind and the meeting of renewable portfolio standards.  
4 So, again, it's a chance to permit Manitoba Hydro to --  
5 to ride that trend.

6 MR. BILL GANGE: Yes. With respect to  
7 that, the -- the -- the new additions of the wind power  
8 throughout the northern region of the MISO area, and I  
9 may be asking you to speculate on this, sir, and -- and  
10 if you can't, you can't, but if you can it probably would  
11 be helpful to the Board to have your thoughts on it.

12 Would -- would the addition of wind power  
13 in Manitoba be seen as a -- as a potential benefit to the  
14 wind producers in -- in the northern regions in terms of  
15 firming up their capabilities in terms of export sales?

16 MR. JUDAH ROSE: Could you restate the  
17 question?

18 MR. BILL GANGE: Yes. I might get Mr. --  
19 or Dr. Miller to restate it. But the point that I'm  
20 making here is that if -- if there is wind power that is  
21 being produced in the United States in the northern  
22 regions of the MISO area, one (1) of the concerns, as I  
23 understand it, is the potential non-dependability of wind  
24 as a result of the wind not blowing.

25 Would it -- would it be -- in your view,

1 would -- would it be attractive to those wind producers  
2 in -- in the northern regions to be able to purchase  
3 power from Manitoba that again is -- is a renewable  
4 resource, so would fall within the -- the category of the  
5 renewable portfolio standard, and -- and help them firm  
6 up their capacities when needed?

7 MR. JUDAH ROSE: Yes, I -- I think that  
8 one (1) of the attractive elements of -- of the hydro,  
9 whether it's firming up the wind or just being firmer  
10 than the wind, much firmer, given the storage  
11 capabilities, et cetera, that's a huge advantage. That  
12 is, you know, as you increase the penetration of the  
13 renewables, you -- you can't just rely on the  
14 intermittent. At a certain point you're -- you're having  
15 to back that up very considerably.

16 MR. BILL GANGE: Thank you.

17 MR. JUDAH ROSE: So I think that that's a  
18 -- an opportunity for Manitoba Hydro. And that's being  
19 reflected in the interest in the product.

20 MR. BILL GANGE: Thank you.

21

22 (BRIEF PAUSE)

23

24 MR. BILL GANGE: Mr. Rose, one (1) of the  
25 things that you talked about was the change in the

1 American political scene, and the impacts that that has  
2 had upon changes with respect to, well, the CO2  
3 restrictions and -- and building of -- of new coal  
4 plants.

5                   And you made it clear that -- that the  
6 federal administration under Present Obama has -- has  
7 imposed a moratorium upon the -- the building of new coal  
8 plants.

9                   MR. JUDAH ROSE:    A de facto moratorium.

10                  MR. BILL GANGE:    Yes.  But the -- the --  
11 you also made a comment that -- that because of the  
12 change in the control of the Congress in the midterm  
13 elections, that it -- that -- that the pace of reform has  
14 changed.  I'll -- I'll use just a -- a neutral term on  
15 that.  That would be a fair categorization, would it not?

16                  MR. JUDAH ROSE:    No, I think maybe just  
17 to say that political situations changed -- it affected  
18 the probability of a CO2 cap and trade program in  
19 particular, I think, was the main thing I was focussing  
20 in on, but secondarily it has effected the -- I guess the  
21 handicapping of what might be happening in the next few  
22 years.

23                  MR. BILL GANGE:    And -- and when you're  
24 doing that handicapping, would you also take into account  
25 regional initiatives?  My understanding is that the --

1 the Western Climate Initiative has been quite an  
2 important process in terms of -- of setting standards in  
3 -- throughout the -- particularly the MISO region.

4 MR. JUDAH ROSE: Yes. As I indicated, the  
5 modelling that we were providing, and have provided to  
6 the -- to Manitoba Hydro to -- does take into account  
7 state renewable portfolio standards, for example, and  
8 other regional initiatives.

9 MR. BILL GANGE: And -- and my  
10 understanding is that a lot of those regional and state  
11 initiatives are still proceeding apace, making the -- the  
12 attractiveness of renewable energy quite pronounced  
13 throughout the united -- throughout -- throughout the  
14 northern region. Would that be fair?

15 MR. JUDAH ROSE: Yes, and again, I think,  
16 you know, if you go to a commission, and you sort of say,  
17 I would like to undertake a PPA that involves getting  
18 hydro into -- into our portfolio, you're -- you're much  
19 more likely to succeed in that area than you would if you  
20 had a different source of power.

21 MR. BILL GANGE: And in particular, that  
22 would effect the carbon dioxide, the -- the impact of  
23 carbon dioxide? The -- the -- that's -- that's been one  
24 (1) of the -- the focuses of the Western Climate  
25 Initiative?



1 have you do it orally, Mr. Wood.

2 MR. GAVIN WOOD: Fine.

3 THE CHAIRPERSON: Okay, we're going to  
4 take a short break and then we'll come back and do it. I  
5 know it's taking a while but we'll get there.

6

7 --- Upon recessing at 4:40 p.m.

8 --- Upon resuming at 4:57 p.m.

9

10 THE CHAIRPERSON: Okay, Mr. Wood...?

11

12 CROSS-EXAMINATION BY MR. GAVIN WOOD:

13 MR. GAVIN WOOD: Thank you. Mr. Rose, I  
14 appreciate -- I think you had commented on a short while  
15 ago, it's been three (3) long days for you and I'm  
16 certainly aware of that. And I -- I -- I know you -- you  
17 heard the exchange this morning in terms of the role that  
18 I -- I'm to play here. I, of course, represent Drs.  
19 Kubursi and Magee in this process and my intention in the  
20 next few minutes is to ask you several questions  
21 involving, basically, clarifications of matters that  
22 you've raised really, primarily, in the supplemental  
23 material that was filed this week as Exhibit 55.

24 I did want to ask to ask you, though, by  
25 way of general in -- in coming into the whole matter of

1 your Exhibit 55. Did I understand you correctly, sir, at  
2 the outset that you -- of your evidence, that you had --  
3 did have an opportunity to review the whole of what I'm  
4 going to call hereafter the KM Report?

5 MR. JUDAH ROSE: I have reviewed the KM  
6 Report, yes.

7 MR. GAVIN WOOD: And as well, sir, I note  
8 that in the Exhibit 55 document you refer to one (1) of  
9 the interrogatory answers provided by -- I'm going to  
10 call them "KM". You'll recall you make reference to one  
11 (1) of the interrogatory answers in your -- in your rep -  
12 - supplemental report.

13 MR. JUDAH ROSE: Yes, I believe so.

14 MR. GAVIN WOOD: And am I to understand  
15 then you've also had an opportunity to review the answers  
16 provided by the doctors?

17 MR. JUDAH ROSE: Yes, I did review the --  
18 some -- some material in which they were responding to  
19 comments.

20 MR. GAVIN WOOD: Okay. And would I under  
21 -- be fair -- would it be fair for me to understand and  
22 for the Board to understand that the principal concerns  
23 and your objections to what you've read in the KM Report  
24 are set out in your supplemental report marked as Exhibit  
25 55?

1                   MR. JUDAH ROSE:    You know, I -- there --  
2 these are some of the -- the comments that I'm respon --  
3 these are some comments I have on their material.  I  
4 wouldn't necessarily say it was exhaustive, but they --  
5 you know, they are the ones that I've been focussing it  
6 on.

7                   MR. GAVIN WOOD:    Okay.  If I could push  
8 you a little further on that.  Should the Board  
9 understand that in -- in -- in general, from your review  
10 of that report, you don't take strong exception to any of  
11 the other major opinions that are provided in that -- in  
12 that report?

13                   MR. JUDAH ROSE:    I -- again, I think it's  
14 the same -- it's a similar question to what you asked me  
15 before, which is I -- there are other areas of concern.  
16 These are some of the ones that I focussed in on and I'd  
17 be glad to answer questions about that.

18                   MR. GAVIN WOOD:    Okay.  I take it from  
19 the exchange between Ms. Ramage and yourself that you  
20 obviously were provided with a copy of the KM Report by  
21 Manitoba Hydro and -- and you were asked to -- to review  
22 it and -- and provide your comments to Manitoba Hydro on  
23 it?

24                   MR. JUDAH ROSE:    Yes, I was asked to  
25 review it.

1                   MR. GAVIN WOOD:    Okay.  And we should  
2 understand then that from your comments, the -- the  
3 supplement report, in terms of the concerns about the KM  
4 Report was -- was developed.  That is, the several areas  
5 that you and I are going to cover in the next few minutes  
6 is the end result of the comments that you made to  
7 Manitoba Hydro?

8                   MR. JUDAH ROSE:    I guess that's fair.

9                   MR. GAVIN WOOD:    Okay.  If I could ask  
10 you, sir, and my intention again, appreciating the time  
11 and such, is to refer to specific pages in the  
12 supplemental report, and firstly, to page 61, please, and  
13 the last bullet on that page.  Whenever you're ready,  
14 sir.

15                  MR. JUDAH ROSE:    I'm there.

16                  MR. GAVIN WOOD:    Thank you.  Sir, the  
17 doctors understand that what you're indicating in that  
18 last bullet is your -- your view is that it -- it's  
19 appropriate that that one (1) variable, an extended  
20 drought, be focussed upon by Manitoba Hydro.  And as I  
21 understood it, and what you were saying I think two (2)  
22 days ago, was that you had observed that Kubursi and --  
23 Kubursi and -- and Magee also deal with other variables.

24                   Is -- is that fair that you had under --  
25 you understand that they do deal with other variables?

1                   MR. JUDAH ROSE:    Yes, and, you know, I  
2 also deal with other variables as well, but -- but I  
3 understand that they deal with more variables.

4                   MR. GAVIN WOOD:    Okay.  Do you agree or  
5 disagree with what I understand is going to be their  
6 position, that it is necessary to take the variation in  
7 other variables, such as energy prices, interest rates,  
8 exchange rates into account when examining the financial  
9 consequences of a drought?

10                  MR. JUDAH ROSE:    I -- where I disagree  
11 with them, as I understand their position, is is that  
12 when -- when you're looking at the risks the Company  
13 faces, they're picking the second-worst event in the  
14 history of the -- of the drought record is sufficiently  
15 stressful that you don't need to compound and have  
16 additional stresses on top of that --

17                  MR. GAVIN WOOD:    Okay.

18                  MR. JUDAH ROSE:    -- in -- except in a  
19 situation where you know that you're already in a drought  
20 and that changes the -- my conclusions.

21                  MR. GAVIN WOOD:    Okay.

22                  THE CHAIRPERSON:    Mr. Wood, I'm sorry,  
23 I'm going to have to interrupt you.  You had offered  
24 before, and I think we're going to take you up on it, if  
25 you wouldn't mind submitting the rest of your questions

1 to Mr. Rose, and -- and then he can respond by way of  
2 undertaking if that would be acceptable to you and to Ms.  
3 Ramage.

4 MS. PATTI RAMAGE: And I suspect that's  
5 because the Board wants to -- to get moving, which --  
6 that is acceptable. Manitoba Hydro had two (2) questions  
7 for redirect, that was the one --

8 THE CHAIRPERSON: Yes, okay. Is that all  
9 right with you though, Mr. Wood?

10 MR. GAVIN WOOD: Yeah. And -- and may I  
11 say, sir, because the questions are set out again, I'll -  
12 - I'll get them over to Ms. Ramage very quickly.

13 THE CHAIRPERSON: Yeah. And Mr. -- I'm  
14 sure Mr. Peters and Ms. Ramage will manage to get them  
15 circulated through the group. I have just three (3)  
16 short questions, and if we could do it in exactly the  
17 same form. I'll just read them into the record and Mr.  
18 Rose can respond in time. We've got a particular time  
19 deadline that we've got to beat now.

20 Okay, the questions are quite simple.  
21 I'll go through them quickly.

22 Yesterday, as I recall, you responded to  
23 one (1) of Mr. Peters' questions to the effect that -- I  
24 think the words were: these days utilities don't  
25 generally build on spec. My first question was: Is my

1 memory more or less correct? If, despite the general  
2 practice, a utility did engage in a major build process,  
3 say one that was to be extended over a long period of  
4 time, would it be reasonable or perhaps even expected,  
5 given no absolute assure -- assured profitability that  
6 would result from the bill -- build, at least in the  
7 early years, that current ratepayers would bear some of  
8 the costs and risks in their current rates.

9  
10 --- UNDERTAKING NO. 66: ICF to respond to the  
11 following question: Is my  
12 memory more or less correct?  
13 If, despite the general  
14 practice, a utility did  
15 engage in a major build  
16 process, say one that was to  
17 be extended over a long  
18 period of time, would it be  
19 reasonable or perhaps even  
20 expected, given no absolute  
21 assured profitability that  
22 would result from the build,  
23 at least in the early years,  
24 that current ratepayers would  
25 bear some of the costs and

1 risks in their current rates?

2

3 THE CHAIRPERSON: The second question is:  
4 Mr. Rose, in response to MIPUG's counsel, you implied  
5 that it would be reasonable to advance construction and  
6 accept the possibility of book losses in the earlier  
7 years of service. My first question there is: Is this  
8 more or less your view? And then the question is: Would  
9 your opinion change if the advancement of the build for  
10 eventual domestic need was a decade or so? And let us  
11 say that the level of the potential early-year losses was  
12 not assured.

13

14 --- UNDERTAKING NO. 67: ICF to respond to the  
15 following question: Mr.  
16 Rose, in response to MIPUG's  
17 counsel, you implied that it  
18 would be reasonable to  
19 advance construction and  
20 accept the possibility of  
21 book losses in the earlier  
22 years of service. My first  
23 question there is: Is this  
24 more or less your view? And  
25 then the question is: Would



1                   you commented on the  
2                   financing of utilities. And  
3                   in the September 2009 report  
4                   to Manitoba Hydro, you  
5                   suggest it would be  
6                   reasonable to review the  
7                   capital structure of Manitoba  
8                   Hydro. First of all, are  
9                   those references fair? And  
10                  the question is: In your  
11                  view, would lenders  
12                  considering financing  
13                  utilities' major capital  
14                  spending plans that, if  
15                  completed, would more than  
16                  double the utilities assets  
17                  and borrowings, would such  
18                  lenders seek substantial  
19                  assurances that the plans  
20                  would lead to profitable  
21                  future results?

22  
23                   THE CHAIRPERSON:    And I'm afraid we'll  
24                  just have to leave the questions like that, and if you  
25                  would just take an undertaking to respond as you please.



1                   would be a non-arbitrage merchant  
2                   trading. Have I got that right?"

3                   And you responded:

4                   "I can't comment on -- on this  
5                   particular exhibit. What I can say is  
6                   that, to my knowledge, the only thing  
7                   the company has been doing was  
8                   arbitrage transactions, asset-related  
9                   transactions, and there was some  
10                  testing of the market when it got  
11                  started at MISO. Other than that, I'm  
12                  not aware of any other activities  
13                  and/or profits and loss associated with  
14                  that. I'm certainly not aware of the  
15                  activities that occurred after we'd  
16                  completed our report in 2009."

17                  Mr. Rose, having now had the opportunity  
18                  to review Exhibit 23, can -- are you now in a position to  
19                  comment on -- on this exhibit, and can you confirm  
20                  whether the statements you made to Mr. Peters still  
21                  apply?

22                  MR. JUDAH ROSE: Yes. First of all, I  
23                  think the statements I made still apply. When I refer to  
24                  arbitrage, I refer to a situation where someone is  
25                  sitting and looking at a difference in two (2) market

1 prices and is able to take a transaction that is riskless  
2 in the sense that there's assumed that there'll be credit  
3 -- the credit with the entities will follow through on  
4 their payment, that there'll be no sudden change in -- in  
5 law or rules, and it doesn't take into account sort of  
6 past sunk decisions, like the decision to buy the  
7 building and put the person in there. And that's a  
8 pretty well-known definition for arbitrage.

9 I will say that, also in my report, I  
10 indicated that, as noted, arbitrage merchant transactions  
11 are an exception to our general views on a merchant  
12 transaction. The prime example of such a transaction is  
13 the purchase of power and/or related products in one  
14 market to be delivered to another market via transmission  
15 capacity owned or controlled by Manitoba Hydro or  
16 controlled on -- on its behalf by others.

17 And as I look at the exhibit, you can see  
18 that they -- the Company is making profits on the  
19 transactions, and that there is some issue with respect  
20 to the allocation of costs based on decisions that were  
21 made pri -- long before the decisions were actually made  
22 to actually enter into a transaction, which are occurring  
23 on a short-term basis, and that there are settlement  
24 adjustments that occurred ex-post to the decisions, which  
25 resulted in additional cost of around \$2 million that

1 were known only ex-post reflected a change in rules.

2                   So I think as a general matter, they are  
3 still arbitrage definition transactions, as I've  
4 indicated on page 102 of my original report, and I think  
5 it's substantiated by the material here in this exhibit,  
6 as I now understand it.

7                   MS. PATTI RAMAGE:   And just to clarify to  
8 make sure I've got the record right or I heard you right  
9 because I -- I think we may have had a -- you said  
10 "decisions made long before" with respect to the  
11 resettlement of costs.

12                   Is that long before or long after the --  
13 with the resettlement?  And make to sure we -- it's just  
14 to make sure the record is correct?  Make sure you  
15 didn't...

16  
17                   (BRIEF PAUSE)

18  
19                   MR. JUDAH ROSE:   The -- what I was  
20 referring to is that there were some decisions that were  
21 made before the arbitrage transaction occurred; you know,  
22 well before, like the decision to actually have the  
23 building or other sort of fixed costs that the entity is  
24 involved in, but once you're involved in that the  
25 transaction is a arbitrage transaction.

1                   Now it may also be an arbitrage  
2 transaction but there is a change in rules ex-post that  
3 you weren't aware of at that time and I would -- that  
4 does vitiate the fact that it's an arbitrage transaction,  
5 even if there are unexpected changes in the rules.

6                   MS. PATTI RAMAGE:   That concludes the re-  
7 direct.

8                   THE CHAIRPERSON:   Thank you very much.  
9 And I want to thank Mr. Rose for your attendance and your  
10 testimony and patience, sir. And we wish you a good trip  
11 to presumably more balmy climates.

12                   And thanks to all the rest of you and  
13 we'll see you all Monday at 9:30, correct? We stand  
14 adjourned.

15                   MR. BOB PETERS:   Yes.

16

17                   (WITNESS STANDS DOWN)

18

19 --- Upon adjourning at 5:13 p.m.

20

21 Certified Correct,

22

23

24

25 \_\_\_\_\_  
Cheryl Lavigne, Ms.