



“When You Talk - We Listen!”



MANITOBA PUBLIC UTILITIES BOARD

Re: MANITOBA HYDRO  
2017/18 and 2018/19  
GENERAL RATE APPLICATION  
PUBLIC HEARING

Before Board Panel:

Robert Gabor	- Board Chairperson
Marilyn Kapitany	- Vice-Chairperson
Larry Ring, QC	- Board Member
Shawn McCutcheon	- Board Member
Sharon McKay	- Board Member
Hugh Grant	- Board Member

HELD AT:

Public Utilities Board  
400, 330 Portage Avenue  
Winnipeg, Manitoba  
December 11, 2017  
Pages 1157 to 1449

1 APPEARANCES

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4

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6 Odette Fernandes (np) )

7 Helga Van Iderstine )

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9 Byron Williams ) Consumers Coalition

10 Katrine Dilay )

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12 William Gange ) GAC

13 Peter Miller (np) )

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15 Antoine Hacault ) MIPUG

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17 George Orle ) MKO

18

19 Senwung Luk (np) ) Assembly of

20 Corey Shefman (np) ) Manitoba Chiefs

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25	TERRY MILES, Sworn	

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## LIST OF UNDERTAKINGS

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1 --- Upon commencing at 9:04 a.m.

2

3 THE CHAIRPERSON: Good morning,  
4 everyone. I hope you had a nice weekend.

5 Ms. Steinfeld, would you like to sort  
6 of give us an overview of the week, and -- and then  
7 talk about today?

8 MS. DAYNA STEINFELD: Certainly, Mr.  
9 Chair. For the week we will have Manitoba Hydro's  
10 revenue requirement panel up for cross-examination.  
11 Board counsel will be concluding its cross-examination  
12 of this panel today. If it is agreeable to the Board,  
13 Mr. Peters is going to take -- after discussion with  
14 Dr. Williams, another hour in the afternoon for a  
15 total of approximately four (4) hours on cross-  
16 examination and then Dr. Williams will take the  
17 remainder of the day.

18 We're scheduled to sit to 5:30. Dr.  
19 Williams will continue his cross-examination tomorrow  
20 and into the morning on Wednesday, at which time Mr.  
21 Hacault from MIPUG will begin his cross-examination.  
22 We do have a shorter day scheduled right now for  
23 Wednesday. We're expecting to conclude at 4:30 that  
24 day, and then MIPUG will continue its cross-  
25 examination through the day on Thursday. Thank you.

1 THE CHAIRPERSON: Thank you. Ms.  
2 Ramage...?

3 MS. PATTI RAMAGE: Yes, thank you, Mr.  
4 Chair. On Friday -- or Thursday I should say you  
5 ended last week by raising a process concern related  
6 to Manitoba Hydro's revenue requirement panel being  
7 cross-examined on independent expert consultant  
8 evidence prior to Manitoba Hydro having been -- having  
9 filed its written rebuttal on the evidence.

10 And I want to thank you for recognizing  
11 that concern. It's consistent with the concerns  
12 Manitoba Hydro raised in its September 18th letter  
13 when the possibility of delays first were raised and  
14 at that time we indicated the view that natural  
15 justice required ICs' work be available and for review  
16 and discovery prior to the start of the oral hearing.

17 Unfortunately, as you indicated, the  
18 scheduling problem could not be resolved and we find  
19 ourselves in a less than ideal position of being on  
20 the stand while the IC reports are coming in while IRs  
21 are still being posed and answered and while the  
22 rebuttal evidence isn't filed.

23 And at this point, the best we can say  
24 is that it is what it is. And we have to make the  
25 best of it and we have to adapt and we have to make

1 this process work. Having said that, I didn't want to  
2 leave the panel with the impression that we don't have  
3 concerns. The reality is from the time the decision  
4 was made to extend the schedule, this is the  
5 inevitable result so the goal is to deal with it the  
6 best we can. We're counting on being afforded  
7 reasonable accommodation in order to address each of  
8 the reports.

9                   From our perspective, that means we  
10 likely won't be able to address IEC con -- reports  
11 fully or perhaps at all in our direct testimony or  
12 under cross-examination, and we may have to ask the  
13 revenue requirement panel be recalled. We will work  
14 with Board counsel to -- to overcome that and -- and  
15 that's Manitoba Hydro's position on it at this point.

16                   But at the end of the day Thursday  
17 there was a comment made that our concerns regarding  
18 the timing of the MGF report were perhaps overstated  
19 and -- because of the fact there's going to be a major  
20 capital panel later on and -- and I just want to bring  
21 -- to address that specific comment.

22                   Manitoba Hydro's major capital panel  
23 will be here to address the management of the  
24 projects, their budgets and the concerns raised by  
25 MGF. They, and by that I mean, the capital panel are

1 not the ones to re -- to address revenue requirement  
2 issues that may arise from the conclusions of the MGF  
3 report; that falls squarely within the bailiwick of  
4 this panel, the revenue requirement panel.

5 Major capital by necessity is being  
6 dealt with at the end of January, and that's the rub.  
7 The revenue requirement panel will step down on  
8 December 19th without addressing what is one (1) of  
9 the largest drivers of rates - capital spending. If  
10 risks with the major projects are identified, and  
11 given Mr. Shepherd's evidence, I think it's a fair  
12 assumption. It will be identified. I fully expect  
13 the PUB's going to want to hear how those risks could  
14 impact the Corporation's financial forecasts.

15 That's not something that the cap --  
16 the major capital panel can address. And if the PUB  
17 wants that perspective, I just want to give the heads-  
18 up that we're going to have to plan for it. That the  
19 revenue requirement panel is going to have to come  
20 back. They're going to have to give direct evidence  
21 on -- and they're going to, I assume, be cross-  
22 examined.

23 So I appreciate your bringing that up,  
24 and -- and it's something that we'll work with Board  
25 counsel to deal with but I didn't want to suggest that

1 it was not an issue by not addressing it.

2                   The other process issue we would like  
3 to bring to the panel's attention is that on Friday we  
4 were provided two (2) sets of materials by the  
5 Coalition; their index of documents and, secondly,  
6 what the Coalition is referring to as Notice of  
7 Questions which are, from our perspective, quite  
8 clearly Information Requests.

9                   I don't believe that it's Information  
10 Requests on the rebuttal evidence. I don't know that  
11 this has been provided to the Board, but we want to  
12 comment that there is nothing in the schedule or the  
13 PUB's process which suggest an Intervenor has the  
14 ability to file IRs on rebuttal evidence. The record  
15 should stand on completion of Manitoba Hydro's  
16 rebuttal evidence. There is no surrebuttal.

17                   And this Board gets the best evidence  
18 where witnesses are focused and know the record.  
19 Distracting witnesses by sending them off to respond  
20 to more IRs the weekend before they're to -- to  
21 testify is -- is simply -- it's a distraction, and in  
22 our view it's, frankly, because the rebuttal evidence  
23 is strong and they need to try a different tact, but  
24 that's not how the rules work. These questions could  
25 have been asked during the IR process and it's not

1 reasonable to ignore the process and allow additional  
2 IRs to be submitted at any time.

3           Having said that, we will be making it  
4 easier. We're -- we're bringing the issue to the  
5 Board's attention in the hope that we can address it  
6 going forward. We're able to make it easier, I think  
7 on everyone, because the fact is that most of the  
8 information the Coalition is looking for is already on  
9 the record and we will arrange to have our witnesses  
10 point out where that is, and hopefully move on, but  
11 these kind of distractions are -- are -- are a problem  
12 from Manitoba Hydro's perspective, and -- and we're  
13 looking for what were -- we object to the disregard  
14 for the process.

15           We were also provided with an index of  
16 documents by the Coalition on Friday. The index  
17 directed Manitoba Hydro to nineteen (19) documents  
18 which the Coalition indicated they may be referring to  
19 during their cross-examination of the panel. We have  
20 concerns with the number -- with a number of these  
21 documents. For example, five (5) of the documents  
22 that are -- were cited in the -- that index, Friday's  
23 index, they're referenced in an appendix to the METSCO  
24 report. It is accurate to say that the documents are  
25 referred to in the METSCO report, but to be clear,

1 they're not citations in support of a position and  
2 they are not documents that were appended to the  
3 METSCO report, rather, they're reports or studies  
4 provided as examples of utilities with mature asset  
5 management report programs. Name of utility; name of  
6 study, nothing more.

7           Now, one (1) of the five (5) we were  
8 directed to on Friday is a Toronto Hydro study; that  
9 study is twenty-five hundred (2500) pages long.  
10 There's no highlighting to so -- show where we're  
11 going in that study or why we are being cross-examined  
12 on it. And I said it -- and I specifically said it  
13 was when we were being directed to. On Sunday night  
14 we got a new index of documents. It's not there  
15 anymore. Our witnesses' time was wasted. They're  
16 trying to keep up and they spent their weekend looking  
17 at these materials and it's gone now.

18           We were also given notice to prepare to  
19 be cross-examined on the Tennessee Valley Authority's  
20 Form 10K. Why? Because it's referenced in MPA's  
21 report. It is not appended, it's referenced. We were  
22 told to be referenced -- to be ready to be cross-  
23 examined on the Bonneville Power Administration's 2016  
24 annual report. It's not on the record anywhere. It's  
25 not a footnote. We were also told to be ready to be

1 cross-examined on Chapters 7 and 8 of Bonbright, 1988.  
2 Those chapters are competitive price as a rate  
3 regulation standard and social principles of  
4 ratemaking. We asked for copies of the reference  
5 materials with passages highlighted to assist in  
6 getting ready. We have the book, but we want to make  
7 sure we're working from the same version, and we're  
8 trying to narrow the focus going forward.

9                   Now Sunday night we were provided  
10 excerpts, not from chapter 7 and 8 from chapters 12  
11 and 13; completely different parts of the book. So it  
12 would appear, again, our time preparing was wasted.  
13 The revised index provided on Sunday evening had  
14 instead of nineteen (19) documents listed, it had  
15 fifteen (15) documents listed and of the nineteen (19)  
16 original, ten (10) are gone entirely and new ones have  
17 been added to the fifteen (15) page index.

18                   We've spent eight (8) months preparing  
19 for this hearing and have amassed thirty-two thousand  
20 (32,000) pages of materials doing so. Witnesses  
21 prepare and they prepare based on the record. In  
22 legal circles, this tactic is sometimes called it --  
23 or it's similar, at least, to trial by ambush. It's  
24 not fair to Manitoba Hydro witnesses, and it's not  
25 fair this panel. Because if the information is

1 important, it should be laid out for the panel in a  
2 clear manner. It should run through the process, just  
3 like all of Manitoba Hydro's evidence runs through the  
4 process.

5                   The purpose of the evidentiary process  
6 is to get the best information in front of the Board  
7 and this is not, in our view, the -- the means of  
8 getting the best information to you. It truly brings  
9 the process into disarray and does not promote getting  
10 the facts before the panel when these reports are  
11 introduced this way. How do we examine the authors?  
12 What is their probative value? How are they rel --  
13 relevant? How do we test them?

14                   Now some of the new documents, Mr.  
15 Will -- Dr. Williams has introduced in his Sunday  
16 night book of documents are his submissions from  
17 previous hearings. From Manitoba Hydro's perspective  
18 that's not evidence. It's argument. And it's  
19 something that our witness -- witnesses should not be  
20 asked to deal with. We can deal with that as it  
21 arises, but I want to bring this issue to the Board's  
22 attention.

23                   In addition to the Bonbright references  
24 a list of Board Orders has -- is -- appears in the  
25 index. This is something Manitoba Hydro -- this panel

1 is not the best one to deal with; that's not -- that's  
2 something I can deal with Dr. Williams and -- and  
3 suggest these questions be deferred to the -- the rate  
4 design panel where Mr. Barnlund sits and where they  
5 are best dealt with. Those were only introduced last  
6 night, so it's not something we could do ahead.

7                   So in the end, and after all of this,  
8 I can say Manitoba Hydro will do the best it can to  
9 deal with this evidence, however, if witnesses feel  
10 they need to clarify the record, it may be -- be again  
11 necessary for them to come back.

12                   I can assure you it's not what we want  
13 to do, we have enough on our plates but if we want the  
14 best evidence in the circumstances, that's what we may  
15 have to do if materials are thrown at us at -- this  
16 manner. I can -- getting materials while I'm sitting  
17 in Eric Coy Arena on a Sunday night where you have to  
18 step outside and hold your phone in the air is not the  
19 best way to receive evidence.

20                   And -- and we wanted to bring that to  
21 the Board's attention, bring it to the Coalition's  
22 atten -- our concerns to the Coalition's attention and  
23 I assume we will address that when the Coalition  
24 begins his cross-examination to understand where we're  
25 going with all these materials.

1 THE CHAIRPERSON: I'm going to call on  
2 Ms. Dilay but before I do, on the issue of the Notice  
3 of Questions which you sort of categorized as IRs, was  
4 it to put you on notice that these questions would be  
5 asked or did they actually ask that information be  
6 provided to them prior to testimony?

7 MS. PATTI RAMAGE: I wish I had them  
8 copied. They are -- from my -- they are IRS. They're  
9 in the same format as Irs. They have a preamble.  
10 They've used the IR format, and given us to them --

11 THE CHAIRPERSON: But is it your  
12 understanding, they ex -- they expected something  
13 prior to cross-examination in that you would provide  
14 the material before cross-examination or is it simply  
15 they put you on notice that these are the -- these are  
16 the questions they would be putting to you in cross-  
17 examination?

18 MS. PATTI RAMAGE: I think they're  
19 materials that -- I -- I don't think the Coalition  
20 expected they'd be provided ahead of time because it  
21 wouldn't be possible, the time it could potentially  
22 take to do them. It would be something akin to an  
23 undertaking only because they have already -- these  
24 matters have already been addressed. It's not like a  
25 question in cross-examination that we can't answer on

1 the fly. It's because it's already been addressed  
2 back in the IR process. It just wasn't asked back  
3 that but, as I say, these materials are -- if you go  
4 through, you can find the answers.

5 THE CHAIRPERSON: Okay, Ms. Dilay...?

6 MS. KATRINE DILAY: Thank you. So in  
7 terms of the -- the questions, I can indicate our --  
8 our intention was not to receive the information  
9 before the cross-examination, it was I guess a notice  
10 of technical questions that the ans -- the answers may  
11 not readily be provided during cross-examination.

12 With regard to the documents that were  
13 -- the book of documents that was provided, I believe  
14 that Dr. Williams will address that this afternoon  
15 either as the issues come up or he might speak to it  
16 at the beginning.

17 THE CHAIRPERSON: Okay, any -- thank  
18 you for putting on the record. We were trying to  
19 design the process as much as possible so everybody  
20 would have a fair opportunity to under -- understand  
21 what case they had to meet and we'll certainly take  
22 your notice under advisement, Ms. Ramage.

23 MS. PATTI RAMAGE: Thank you.

24 THE CHAIRPERSON: I will indicate --  
25 I'm going to talk to counsel at the break and we --

1 we may have to adjust the procedure at a later date  
2 in order to ensure that the -- our goal of having all  
3 the evidence on the record is met. Mr. Peters...?

4

5 CONTINUED MANITOBA HYDRO PANEL 2 re REVENUE

6 REQUIREMENT

7 LIZ CARRIERE, Resumed

8 LOIS MORRISON, Resumed

9 DAVID CORMIE, Resumed

10 SANDY BAUERLEIN, Resumed

11 JOEL WORTLEY, Resumed

12 SUSAN STEPHEN, Resumed

13 CHUCK STEELE, Resumed

14 JAMES MCCALLUM, Resumed

15 HAL TURNER, Resumed

16 GERALD NEUFELD, Resumed

17 DAVID SWATEK, Resumed

18

19 CONTINUED CROSS-EXAMINATION BY MR. BOB PETERS

20 MR. BOB PETERS: Thank you. Good

21 morning, Mr. Chair, Board panel members, Manitoba

22 Hydro witnesses, ladies and gentlemen.

23 I'd like to ask that volume 1, page 179

24 be put on the screen just to orientate ourselves this

25 morning.

1 Ms. Bauerlein, good morning, we see on  
2 the screen in front of us from Board counsels' book of  
3 documents, which is Exhibit 42-1, page 179. And  
4 that's the income statement of the integrated  
5 financial forecast that Manitoba Hydro has prepared.

6 Is that correct?

7 MS. SANDY BAUERLEIN: Good morning,  
8 Mr. Chairman, Madam Vice-Chair and Board members.

9 Yes, it is the income statement of  
10 Manitoba Hydro projected.

11 MR. BOB PETERS: All right. So we're  
12 going to focus for the next short -- short while, on  
13 the operating and -- operating and administrative  
14 expenses under the test year 2018, and that's \$518  
15 million in this forecast?

16 MS. SANDY BAUERLEIN: That is correct.

17 MR. BOB PETERS: And then likewise, in  
18 the following test year 2019, it shows up as \$501  
19 million, correct?

20 MS. SANDY BAUERLEIN: That is correct.

21 MR. BOB PETERS: All right, if we  
22 could jump well forward to volume 4 of Board counsels'  
23 book of documents, and volume 4 is Exhibit 42-4.  
24 We're to be in tab 62, and specifically at page 231.

25 Are you with this, Ms. Bauerlein?

1 MS. SANDY BAUERLEIN: Yes. Yes.

2 MR. BOB PETERS: When Manitoba Hydro  
3 filed its operating and administrative expense  
4 breakdown it was a bit unusual, was it not, in this  
5 General Rate Application because Manitoba Hydro was  
6 unable to provide the level of detail it had  
7 previously provided in -- in other hearings?

8 MS. SANDY BAUERLEIN: Correct. We had  
9 set targets for both the 2017/'18 fiscal year and  
10 2018/'19, but had not undergone a detailed budgeting  
11 exercise to break that down into all the individual  
12 components.

13 MR. BOB PETERS: So is the \$518  
14 million for the 2018 forecast year, the target?

15 MS. SANDY BAUERLEIN: That is correct.  
16 That is the approved forecast or you may phrase it as  
17 a target, yes.

18 MR. BOB PETERS: Can you explain to  
19 the panel why Manitoba Hydro does not have the detail  
20 at this point in time?

21 MS. SANDY BAUERLEIN: So we establish  
22 the targets by looking at what we had spent in  
23 2016/'17 and we adjusted it for what we anticipated to  
24 be the impacts of the voluntary departure program.

25 Manitoba Hydro throughout this filing

1 is continuing to feel the effects of that  
2 restructuring. When we -- we -- to put all this  
3 together, we made a lot of assumptions in terms of how  
4 many people would leave, what the salary of those  
5 people would be and even though now we do you have --  
6 we do have a -- a number, a clear number of the eight  
7 hundred and twenty-one (821) that are leaving, we  
8 continue to be in a process of restructuring  
9 throughout many departments where functions are being  
10 changes, individuals are being transferred and moved  
11 around.

12                   So, the ability to be able to prepare a  
13 detailed forecast isn't there. So we manage the total  
14 operating and administrative costs at the company  
15 level.

16                   MR. BOB PETERS:    On the sheet in front  
17 of us under Capitalized Labour and Overhead, Ms.  
18 Bauerlein, there's the 2016/'17 outlook number of  
19 \$355.9 million, correct?

20                   MS. SANDY BAUERLEIN:   That is correct.

21                   MR. BOB PETERS:    Now, I may have put  
22 some misinformation through this panel on the record.  
23 When I look at that \$355.9 million number and compare  
24 it to the total employee related expenditures of  
25 \$854.7 million, it appears that Manitoba Hydro is

1 actually capitalized -- or had capitalized in 2017  
2 approximately 42 percent of their workforce.

3 MS. SANDY BAUERLEIN: That's a -- from  
4 a point of view of the total costs that are being  
5 capitalized.

6 MR. BOB PETERS: Not necessarily the  
7 number of people?

8 MS. SANDY BAUERLEIN: When I was  
9 talking 30 percent, it's the workforce, the number of  
10 hours that typically are capitalized.

11 MR. BOB PETERS: So in addition to the  
12 wages, there are overheads capitalized in that \$355  
13 million number?

14 MS. SANDY BAUERLEIN: The three fifty-  
15 five (355) is really the capitalization of all the  
16 costs that you see in the eight fifty-four (854)  
17 number up above. So it's the wages of the employees;  
18 the amount of overtime that's related to our capital  
19 projects; the amount of benefits that get added to  
20 that labour and then charged to the capital projects;  
21 as well as other types of costs. For example, motor  
22 vehicles, when a crew is working on a capital project  
23 they might have some -- some -- a bucket truck, for  
24 example, with them. So those costs would also be  
25 charged to the capital project through something that

1 we call an activity rate.

2 MR. BOB PETERS: Okay. Thank you for  
3 that. On page 263 of the same volume 4 of Board  
4 counsel book of documents, Exhibit 42-4, Manitoba  
5 Hydro provides what is called the headcount and this  
6 is the headcount, Ms. Bauerlein, of the employees that  
7 have applied for and have been accepted in the  
8 voluntary departure program?

9 MS. SANDY BAUERLEIN: That is correct  
10 with the one (1) exception, there were four (4)  
11 employees -- additional employees related to our  
12 subsidiaries. So because this was an organizational  
13 view of our -- our operating and corporate groups, the  
14 total year is eight hundred and seventeen (817) but  
15 you may have also heard us quote the eight twenty-one  
16 (821), which is the total including subsidiaries.

17 MR. BOB PETERS: And so, for example,  
18 which subsidiaries would those four (4) additional  
19 people --

20 MS. SANDY BAUERLEIN: Related to MHI.

21 MR. BOB PETERS: Manitoba Hydro  
22 International?

23 MS. SANDY BAUERLEIN: Yes.

24 MR. BOB PETERS: All right. Does this  
25 headcount include not only the voluntary departure

1 program employees, but any other employees whose  
2 services may have been terminated by the Corporation?

3 MS. SANDY BAUERLEIN: No, it does not.  
4 It only includes those employees that accepted the  
5 voluntary departure program. In some cases it may be  
6 management, but it is those that applied for and were  
7 accepted under the voluntary departure program.

8 MR. BOB PETERS: In addition to the  
9 eight hundred and seventeen (817) headcount on the  
10 Manitoba Hydro electric side, how many additional  
11 employees have been terminated?

12 MS. SANDY BAUERLEIN: I think it was  
13 discussed by Mr. Shepherd, there was three (3)  
14 executive and I believe approximately forty -- forty-  
15 eight (48) or forty-nine (49) but some of that  
16 management would be in here and some of it would be  
17 through severance.

18 MR. BOB PETERS: Okay. I was just  
19 trying to get a handle for the panel, Ms. Bauerlein,  
20 that of the eight hundred and seventeen (817)  
21 headcount, as it's called on your -- page 263 of Board  
22 counsels' book of documents, Manitoba Hydro estimates  
23 that the costs, the salaries associated with those  
24 eight hundred and seventeen (817) works out to \$91.9,  
25 million a year?

1 MS. SANDY BAUERLEIN: Yes, that is an  
2 approximation, yes

3 MR. BOB PETERS: Now, I'm trying to  
4 get in addition to that eight hundred and seventeen  
5 (817) it sounds like there could be 53 additional,  
6 some of which will be, I suppose, included in the  
7 headcount, some of which are not.

8 MS. SANDY BAUERLEIN: That is correct.  
9 Some of them would be included in the headcount and  
10 some would not.

11 MR. BOB PETERS: Are you able to  
12 provide the panel with an estimate as to how many over  
13 and above the eight hundred and seventeen (817) are  
14 employees that will be departing the Company?

15

16 (BRIEF PAUSE)

17

18 MS. SANDY BAUERLEIN: Sorry, about  
19 that. There was approximately ten (10) to fifteen  
20 (15) that were severed, the rest would be in that  
21 count.

22 MR. BOB PETERS: And are you able to  
23 advise the Board of those ten (10) to fifteen (15)  
24 that are severed, they're not included in this  
25 headcount or this dollar calculation shown on page

1 263?

2 MS. SANDY BAUERLEIN: Correct. This  
3 was providing information on the -- the headcount  
4 numbers and the savings through the voluntary  
5 departure program only.

6 MR. BOB PETERS: So for the additional  
7 ten (10) or fifteen (15), what is the estimated  
8 additional savings attributed on an annual basis by  
9 not having those salaries and benefits?

10 MS. SANDY BAUERLEIN: I would have to  
11 do a check on that. But I would assume it would be at  
12 approximately two hundred thousand (200,000) empl -- I  
13 think that would be 150 -- 150,000 in employee plus  
14 benefits.

15 MR. JAMES MCCALLUM: Yeah, I -- I  
16 think the -- the order of magnitude here is -- is in  
17 the range of \$2 million for the additional -- and it's  
18 an approximation, ten (10) or fifteen (15) people that  
19 were severed as opposed to left the Company through  
20 the voluntary departure program. Those were in the  
21 main reasonably senior managers and so I think \$2  
22 million is probably a good number to work with.

23 MR. BOB PETERS: And thank you, Mr.  
24 McCallum. Were those positions deleted or were just  
25 the people terminated?

1 MS. SANDY BAUERLEIN: Are you talk --

2 MR. JAMES MCCALLUM: Go ahead, Sandy.

3 MS. SANDY BAUERLEIN: Are you asking  
4 about the voluntary departure program or the ten (10)  
5 to fifteen (15) in the management area?

6 MR. BOB PETERS: I was starting with  
7 the -- the management area, Ms. Bauerlein. Were those  
8 positions eliminated?

9 MR. JAMES MCCALLUM: In -- in some  
10 cases, yes, for example, the three (3) vice-presidents  
11 that left the Corporation, all of those positions were  
12 deleted and we consolidated the what we call groups,  
13 operating or corporate groups, we consolidated several  
14 together in order to permanently eliminate the three  
15 (3) vice-president positions. In other cases, we  
16 eliminated a department manager position, and combined  
17 departments. So, we were able to eliminate a  
18 position. In others, we had folks leave the Company  
19 and -- and move somebody else into their role.

20 MR. BOB PETERS: Would you accept, Mr.  
21 McCallum, that that if I take the fifteen (15)  
22 positions in addition to what's shown on page 263, and  
23 those fifteen (15) positions that were severed  
24 approximately four (4) of them the positions were  
25 removed but eleven (11) of the positions were

1 refilled?

2 MR. JAMES MCCALLUM: No, I don't think  
3 that's accurate. We would have to go back and look.  
4 I mean, these are approximations we're talking to.  
5 But in the main, I would say the majority of the  
6 positions that were severed, we have carried forward  
7 without filling the position. We've combined  
8 departments, combined operating groups in order to  
9 have one (1) person carry on in the place of two (2).

10 MR. BOB PETERS: So, Ms. Bauerlein,  
11 I'll leave it on the basis that of the -- in addition  
12 to the \$91.9 million, the best evidence of the Company  
13 now is that there's an additional \$2 million of annual  
14 savings expected from those that were severed from the  
15 Company not part of the voluntary departure program?

16 MS. SANDY BAUERLEIN: Yes, that would  
17 be approximation of the additional savings, yes.

18 MR. BOB PETERS: When would Manitoba  
19 Hydro have a more accurate number? Would it have to  
20 wait until year end?

21 MS. SANDY BAUERLEIN: We would wait  
22 till the -- for just the management piece or for the  
23 total?

24 MR. BOB PETERS: I was thinking the  
25 total.

1 MS. SANDY BAUERLEIN: We would wait  
2 until the end of the voluntary departure program.  
3 We're expecting the majority of people to be gone by  
4 February 1st of 2018. And at that time, we would have  
5 the actual salaries and -- and cost savings. This is,  
6 again, is an approximation.

7 MR. BOB PETERS: When you say the  
8 majority will be leaving before -- on or before  
9 February 1st of 2018, how long does this voluntary  
10 departure program carry on for?

11 MS. SANDY BAUERLEIN: It does really  
12 run till February 1st. There are a couple employees -  
13 - a few employees, two (2) to three (3) that are  
14 staying on slightly longer than that timeframe to meet  
15 business requirements.

16 MR. BOB PETERS: So, Ms. Bauerlein,  
17 on page 235 of Board counsels' book of documents,  
18 volume 4, the forecast information that we were  
19 looking at in the response near the last paragraph of  
20 the page, the forecast assumed reductions of  
21 approximately five hundred (500) EFT's and it was for  
22 a partial year.

23 When we go back to page 231 and we look  
24 at that \$518 million number, does that now include too  
25 few of the employees who are actually going to be

1 leaving the Company?

2 MS. SANDY BAUERLEIN: No, it -- it  
3 does not. The forecast was put together before we  
4 understood what the details of the voluntary departure  
5 program was going to be, exactly how many employees  
6 would -- would agree to the take-up of the program  
7 but, it had a bunch of assumptions in the forecast.

8 It assumed again, a lower number of  
9 people but it assumed many of them leaving sooner, so  
10 it assumed that many of those five hundred (500) would  
11 be gone earlier in the year.

12 It made assumptions in terms of salary,  
13 what the average of salaries of employees are. And so  
14 continually throughout the year, we've been doing  
15 analysis to ensure that the \$518 million number is  
16 still a good number.

17 Again, many of the employees now are  
18 leaving later. The majority of the uptake is -- is in  
19 the end of the year, January. So we'll only have  
20 three (3) months worth of savings. As well, we've  
21 looked at what the -- you know, some of the actual  
22 salaries are of some of the employees that are leaving  
23 and the terms of the voluntary departure program.

24 During the forecast we weren't sure  
25 what those terms were going to look like. Right now

1 it's a -- it was -- at this point it's a thirty (30)  
2 week. They're getting thirty (30) weeks of -- of paid  
3 salary. At the time of the forecast it was forty (40)  
4 weeks.

5                   So again, there was just different  
6 assumptions based in and we have continually reviewed  
7 that number to make sure that -- now that we know some  
8 differences that that five hundred and eighteen (518)  
9 is still a good number in terms of where we expect our  
10 operating and administrative costs to come in for the  
11 2017/'18 fiscal year.

12                   MR. BOB PETERS:    If we turn to the  
13 2018/'19 fiscal year, the forecast, Ms. Bauerlein, we  
14 see 501 million is the forecast operating and  
15 administrative costs, correct?

16                   MS. SANDY BAUERLEIN:    That is correct.

17                   MR. BOB PETERS:    And in that \$501  
18 million number, Manitoba Hydro has assumed is it five  
19 hundred (500) voluntary departures under the voluntary  
20 departure program?

21                   MS. SANDY BAUERLEIN:    Yes. We had  
22 assumed the same -- when we did the forecast, we had  
23 made the same assumptions in terms of that there would  
24 be five hundred (500) people gone and what the average  
25 salary would be, at the time we put the forecast

1 together.

2 MR. BOB PETERS: And so now you have a  
3 degree of confidence that that five hundred (500)  
4 number is too low, and there'll be...

5 MS. SANDY BAUERLEIN: No, again, what  
6 we've done is we've done further analysis to verify,  
7 you know, is the five hundred and one (501) number, a  
8 number that we want to take forward in the test years,  
9 and we believe so.

10 So, while we do have a higher uptake in  
11 the VDP, what we have to account for in our costs and  
12 what we've done is we've taken a look to say, okay, we  
13 now know wage settlement impacts. We know the people  
14 that are left. So we know the impacts of those  
15 negotiated collective agreements. So, we have an  
16 impact on wage settlements.

17 We also have -- have an impact in terms  
18 of -- taking approximately, you know, eight hundred  
19 (800) people out of the Company has a significant  
20 impact on the work. We're continually, as I  
21 mentioned, in trying to put together -- our inability  
22 to put together a detailed forecast is because things  
23 are changing. People are now needing to perhaps --  
24 we're looking as -- as a manager, you're looking for  
25 what work do I need to do, what work can I stop doing,

1 what work do I do differently, and if I need to  
2 continue with that work, how do I do it differently?  
3 So I -- we'll need costs for retraining of staff.  
4 Some staff need to go into different types of work, so  
5 they need retraining for that.

6           We're also looking for opportunities to  
7 try and you -- to take advantage of different IT  
8 technologies to assist in enabling the Company to  
9 still operate at a -- with the -- such a reduced  
10 workforce. Examples that -- things that we're looking  
11 at, for example, is something called robotics process  
12 automation.

13           So all of these things that we need to  
14 do to be able to facilitate the Corporation in being  
15 able to operate and function will require some one (1)  
16 time costs that will be incurred in the 2018/'19  
17 fiscal year. So while we've had a higher headcount,  
18 we also recognize that there are some costs needed to  
19 be able to allow the Company to continue to manage at  
20 that level.

21           So we still believe that 501 million is  
22 a -- a good forecast number, and a good target for  
23 what our costs need to be for the 2018/'19 fiscal  
24 year.

25           MR. BOB PETERS: Ms. Bauerlein, that

1 \$501 million number only includes approximately \$56  
2 million of savings as a result of the voluntary  
3 departure program, though?

4 MS. SANDY BAUERLEIN: In the forecast,  
5 yes, but as I said, what we have done is we've taken  
6 the savings now, and we've adjusted for -- so we've  
7 incorporated the actual savings, which would be  
8 greater, but as I said, there's other costs that we  
9 anticipate to incur in the 2019 -- '18/'19 fiscal year  
10 to allow us to manage.

11 MR. BOB PETERS: Ms. Bauerlein, are  
12 you able to provide the Board with the analysis that  
13 you're referring to that will show the updated work by  
14 Manitoba Hydro, continues to support the 501 million  
15 in the \$518 million forecast?

16 MS. SANDY BAUERLEIN: Yes, we could  
17 provide the analysis that shows that the five hundred  
18 and eighteen (518) and five hundred and one (501) are  
19 -- are still good operating and administrative targets  
20 for those years, or forecast for those years, yes.

21 MR. BOB PETERS: All right. So I'll -  
22 - I'll ask that as -- that's something that's not  
23 readily at hand, is it?

24 MS. SANDY BAUERLEIN: Not readily at  
25 hand.

1                   MR. BOB PETERS: All right. So then  
2 I'll ask through your counsel, Ms. Ramage, if -- if  
3 Manitoba Hydro will provide an undertaking to provide  
4 its most current analysis to support the operating and  
5 administrative costs in the 2017/'18 year forecast as  
6 well as in the 2018/'19 year forecast, including the  
7 voluntary departure information. Would that be  
8 acceptable?

9                   MS. SANDY BAUERLEIN: Yes, we except.

10

11 --- UNDERTAKING NO. 5: Manitoba Hydro to provide  
12 its most current analysis  
13 to support the operating  
14 and administrative costs  
15 in the 2017/'18 year  
16 forecast as well as in the  
17 2018/'19 year forecast,  
18 including the voluntary  
19 departure information

20

21 CONTINUED BY MR. BOB PETERS:

22                   MR. BOB PETERS: Okay. Thank you.  
23 The restructuring costs that you mentioned to the  
24 panel, Ms. Bauerlein, those aren't shown here, are  
25 they? Those would be in other expenses in the --

1 MS. SANDY BAUERLEIN: The costs that I  
2 was referring to are costs that we are going to con --  
3 they're not a -- a direct -- we're not treating them  
4 as a direct cost to restructure. The restructuring  
5 costs are only the amounts being paid to employees as  
6 a result of the voluntary departure program. So the  
7 cost that I was referring to in terms of cost that --  
8 for example, a training of staff, that will be charged  
9 to operating and administrative costs.

10 MR. BOB PETERS: Is that shown under  
11 the other line on -- on the page 231 that's in front  
12 of us?

13 MS. SANDY BAUERLEIN: It's -- it's not  
14 -- some of it might wind up in the other line. Some  
15 of it will wind up maybe in -- in other types of  
16 costs. So for example, if we hire consultants, for  
17 example, to help with some of the implementation of  
18 our IT technologies, that would appear in external  
19 services.

20 MR. BOB PETERS: Ms. Bauerlein, in  
21 addition to the voluntary departure program, Manitoba  
22 Hydro has previously committed to redo -- reduce the  
23 workload at the Corporation. Is that correct?

24 MS. SANDY BAUERLEIN: I'm not sure  
25 what you mean by work -- committed to reduce the

1 workload, yes.

2 MR. BOB PETERS: Let me rephrase the  
3 question. Leaving aside the voluntary departure  
4 program, Manitoba Hydro had previously embarked on  
5 reductions in the positions at Manitoba Hydro?

6 MS. SANDY BAUERLEIN: Yes, over the  
7 period 2014/'15 to 2016/'17, we reduced approximately  
8 for hundred and twenty-nine (429) operational  
9 positions.

10 MR. BOB PETERS: And the Board will  
11 see that on page 255 of Board counsels' book of  
12 documents, under Tab 65 of Exhibit 42-4. And Ms.  
13 Bauerlein, this chart summarizes what you've just told  
14 the Board, and that is in terms of what your committed  
15 reductions were compared to your actual reductions,  
16 Manitoba Hydro has reduced four hundred and twenty-  
17 nine (429) positions?

18 That is correct, four hundred and  
19 twenty-nine (429) operational positions were reduced  
20 over that three (3) year period.

21 MR. BOB PETERS: Right. Now, when we  
22 say four hundred and twenty-nine (429) operational  
23 positions have been reduced, does that mean the  
24 position itself was eliminated?

25 MS. SANDY BAUERLEIN: Yes. The

1 position was --

2 MR. BOB PETERS: I mean the --

3 MS. SANDY BAUERLEIN: -- we call it  
4 'delimited'. The position was delimited. It no  
5 longer exists.

6 MR. BOB PETERS: What happened to the  
7 employee that was in the position?

8 MS. SANDY BAUERLEIN: In some cases,  
9 employees retired. In some cases employees had  
10 accepted other jobs in the -- in the Company, so they  
11 would bid on another job, and then that position would  
12 be vacant, and the manager would decide that -- that  
13 we were going to either, you know, stop the work,  
14 redistribute the work, and then therefore eliminate  
15 the position and not automatically fill that position  
16 when the employee either retired or moved on to  
17 another area.

18 MR. BOB PETERS: And this is showing  
19 the panel the four hundred and twenty-nine (429)  
20 positions were delimited bef --

21 MS. SANDY BAUERLEIN: That is correct.

22 MR. BOB PETERS: -- before the  
23 voluntary departure program?

24 MS. SANDY BAUERLEIN: That is correct.

25 MR. BOB PETERS: And the savings that

1 accrued to the Corporation as a result of that are  
2 shown at \$43.2 million a year?

3 MS. SANDY BAUERLEIN: Yes.

4 MR. BOB PETERS: And on an annual  
5 basis --

6 MS. SANDY BAUERLEIN: That is the  
7 cumulative savings --

8 MR. BOB PETERS: Yes, but on -- on an  
9 --

10 MS. SANDY BAUERLEIN: -- over the  
11 three (3) years, yes.

12 MR. BOB PETERS: -- annual basis, it's  
13 -- what is Manitoba Hydro forecasting will be the  
14 annual savings as a result of the delimiting of four  
15 hundred and twenty-nine (429) positions?

16 MS. SANDY BAUERLEIN: It would be  
17 savings in terms of the incremental of not having  
18 those positions anymore. So again, you would be  
19 saving your 43.2 million cumulative, and you would  
20 save that basically on an ongoing basis, because those  
21 costs -- your OM&A would be higher by that much money  
22 if those positions still existed.

23 MR. BOB PETERS: And -- and put  
24 inversely, the OM&A expense that you have included in  
25 your budget way back on page 231 of Board counsels'

1 book of documents is \$43.2 million lower as a result  
2 of the delimiting of those positions?

3 MS. SANDY BAUERLEIN: It is lower when  
4 you compare it over -- so again, we took our -- our  
5 outlook -- our -- our '16/'17 numbers. So the  
6 '16/'17, the 535 million would already have those  
7 savings built into it.

8 MR. BOB PETERS: In the undertaking  
9 that you've agreed to provide, will there be special  
10 recognition for these delimited positions in the  
11 savings that is accrued to them?

12 MS. SANDY BAUERLEIN: I was under the  
13 understanding I was trying to take you to -- from the  
14 five thirty-five (535) to the five eighteen (518). So  
15 that would include the impacts of the voluntary  
16 departure program and those that were severed. The  
17 five thirty-five (535) already embeds those other  
18 savings. Those -- those people were gone in the five  
19 hundred (500) -- or those positions were gone in the  
20 five hundred and thirty-five (535) starting point.

21 MR. BOB PETERS: All right. I'm still  
22 just not clear on the annual savings as a result of  
23 the delimiting of the -- of the four hundred and  
24 twenty-nine (429) positions. I have the cumulative  
25 total, but on an annual basis, what is Manitoba Hydro

1 expecting to realize as -- as savings by delimiting  
2 those four hundred and twenty-nine (429) positions?

3 MS. SANDY BAUERLEIN: You don't  
4 continually -- to see the savings in each year as a  
5 lower number because those savings are already built  
6 in. So you've -- you've had the 40 -- \$43 million  
7 included in your 535 million. So your savings are  
8 really, Well, if you still had those people, what  
9 would have been my incremental cost? So my \$518  
10 million would be \$43 million more, approximately.

11 MR. BOB PETERS: Is it correct that  
12 Manitoba Hydro has handled the voluntary departure  
13 program and this delimiting of positions internally,  
14 through its human resources, or has Manitoba Hydro  
15 contracted an external consultant on that matter?

16 MS. SANDY BAUERLEIN: Can you repeat  
17 the question?

18 MR. BOB PETERS: Well, let's start  
19 with the voluntary departure program. Is that being  
20 handled by Manitoba Hydro's human resource department,  
21 or is there an external consultant that's been engaged  
22 to deal with that?

23 MR. JAMES MCCALLUM: Well, I -- I  
24 guess there's a -- a few elements, I think, to your  
25 question, Mr. Peters, if I'm understanding it. Vis-a-

1 vis the kind of practicalities of identifying and  
2 dealing with eight hundred and seventeen (817)  
3 individuals and having them leave the Corporation,  
4 that we did in-house with our human resources  
5 department.

6                   The job of figuring out how to continue  
7 running the Company after they're gone has been also  
8 managed in-house throughout the Company. I mean,  
9 every manager, director, and vice president has spent  
10 an enormous amount of their time over the last year  
11 figuring out an operational plan to continue running  
12 our business with 15 percent fewer people.

13                   But if the question is, did we engage  
14 outside consultants at this stage to help us with  
15 that, we have not. Although, as Ms. Bauerlein spoke  
16 to, we recognize that there is going to be some effort  
17 and some help required to continue adjusting our  
18 business to what is a very significant workforce  
19 reduction.

20                   We're kind of just at the initial  
21 stages of it, given that -- that of the eight hundred  
22 (800) people, you know, roughly only three hundred  
23 (300) have left to date with -- with more than five  
24 hundred (500) still to leave on February the 1st.

25                   MR. BOB PETERS: All right. Thank

1 you, Mr. McCallum.

2 I'd like to turn briefly to Tab 70 of  
3 Board counsels' fourth book of documents, page 322,  
4 and my only point to turn to this is to bring to the  
5 panel's attention some questions that had been asked  
6 earlier by, I think counsel for MKO related to  
7 payments from government or payments to government.

8 This is a summary page, is it, that  
9 reflects what payments Manitoba Hydro makes on an  
10 annual basis to various government entities?

11 MS. SANDY BAUERLEIN: That is correct.

12 MR. BOB PETERS: And but for the  
13 column called municipal GILT, or gifts in lieu of  
14 taxes and business taxes, the other payments are made  
15 to the Province of Manitoba?

16 MR. JAMES MCCALLUM: I'd just correct  
17 that there -- it's not a gift in lieu of taxes, it's a  
18 grant in lieu of taxes, but -- but --

19 MR. BOB PETERS: 'Tis the season, Mr.  
20 McCallum?

21 MR. JAMES MCCALLUM: Ho ho ho. Yes,  
22 the balance goes to the Province.

23 MR. BOB PETERS: Does this -- does  
24 this chart include Manitoba Hydro's expected or  
25 anticipated payments to the Province on account of

1 Keeyask and Bipole III as well?

2 MS. SANDY BAUERLEIN: I'm not sure  
3 what -- what you're asking. In terms of the impact on  
4 our -- our provincial guarantee fee, or capital taxes?  
5 I'm -- I'm not --

6 MR. BOB PETERS: Let me try it this  
7 way. On -- on page 334 of Board counsels' book of  
8 documents, Manitoba Hydro has provided a chart of what  
9 payments Manitoba Hydro has made and expects to make  
10 to the Province of Manitoba related to the Keeyask  
11 project, correct?

12 MS. SANDY BAUERLEIN: Correct.

13 MR. BOB PETERS: And these payments  
14 are included in the previous schedule that we reviewed  
15 on page 322?

16 MS. SANDY BAUERLEIN: Yes.

17 MR. BOB PETERS: All right. Thank  
18 you. Also, on page 335, Manitoba Hydro has provided  
19 the Board with an indication of what payments Manitoba  
20 Hydro will -- has made and will be making on a  
21 forecast basis to the Province related to the Bipole  
22 III project, correct.

23 MS. SANDY BAUERLEIN: That is correct.

24 MR. JAMES MCCALLUM: I -- I might just  
25 caution, Mr. Peters, that these payments you've

1 referenced on page 335 and the other relating to  
2 Keeyask kind of have a simplifying assumption around  
3 how much debt remains attached to each of Bipole and  
4 Keeyask.

5 I think we -- we kind of talked about  
6 last week that we don't stream or finance individual  
7 projects individually. So the master sheet, and I've  
8 lost it -- ult -- ultimately, our debt guarantee fee,  
9 our capital tax are really determined by the  
10 capitalization and the business, regardless of where  
11 it's applied. As well, the water rental fees are --  
12 are determined basis, the -- the generation of the  
13 business regardless of which station it -- it's  
14 generated at. So I think the -- the master schedule  
15 is probably the -- the best one to look to as to the  
16 payments to the Province.

17 MR. BOB PETERS: Do I understand the  
18 point of your comment, Mr. McCallum, to be telling the  
19 Board that even though Manitoba Hydro has calculated  
20 the payments to the Province for the Keeyask project  
21 and for the Bipole III project, that's not in practice  
22 how Manitoba Hydro does the math?

23 MR. JAMES MCCALLUM: That -- that's  
24 correct. We do it on a consolidated -- meaning at the  
25 electric segment level, a consolidated basis, if that

1 hopefully makes sense. I can try again.

2 MR. BOB PETERS: All right. Thank  
3 you. I'd like to leave OM&A expense, if I could, Mr.  
4 Chair, Board members, and turn over some power  
5 resource and some export issues. And I believe Mr.  
6 Cormie, you will be assisting the panel in this  
7 regard.

8 Could we start, please, on Board  
9 counsels' fourth book of documents, Exhibit 42-4 on  
10 page 102, 102.

11

12 (BRIEF PAUSE)

13

14 MR. BOB PETERS: And Mr. Cormie, help  
15 me as you can, and I -- I see Mr. Miles isn't far  
16 away. And if -- if additional information is  
17 required, certainly avail yourself of his assistance.

18 But what you're showing the Board on  
19 page 102 of Board counsels' book of documents is how  
20 Manitoba Hydro plans to meet its load each and every  
21 year in the forecast?

22 MR. DAVID CORMIE: Yes, that -- this  
23 table shows how we expect to meet the energy demand.

24 MR. BOB PETERS: And on page 102 of  
25 Board counsels' fourth book of documents, you say the

1 energy demand because you're wanting the Board to know  
2 that you also do a similar sheet, and we -- we'll --  
3 we'll come to that, on the capacity side?

4 MR. DAVID CORMIE: Yes, the capacity  
5 is -- is to ensure that we have enough generating  
6 capacity to meet the peak demands of our customers  
7 plus our reserve obligations.

8 MR. BOB PETERS: And on this chart,  
9 Mr. Cormie, there's also in the heading, if we could  
10 just scroll up a little bit, we see the word  
11 "dependable resources," correct?

12 MR. DAVID CORMIE: Yes, that -- that's  
13 correct.

14 MR. BOB PETERS: You showed the panel  
15 in your direct evidence the last approximate hundred  
16 years of water flows with your -- with your bar chart,  
17 correct?

18 MR. DAVID CORMIE: I did, yes.

19 MR. BOB PETERS: And do the dependable  
20 resources reflect the resources that would be  
21 available to Manitoba Hydro if Manitoba Hydro suffered  
22 the lowest water levels in its recorded history?

23 MR. DAVID CORMIE: Yes, this reflects  
24 the -- the worst-case historic drought.

25 MR. BOB PETERS: So everything above

1 the historic drought will be surplus to what's on this  
2 chart?

3 MR. DAVID CORMIE: Yes. There will be  
4 surplus energy available under better than minimum  
5 flow conditions, yes.

6 MR. BOB PETERS: If we briefly look,  
7 the -- the top half of the page, or the -- sorry, the  
8 top third of the chart is -- is empty, and that  
9 reflects that Manitoba Hydro has no new power  
10 resources on the horizon?

11 MR. DAVID CORMIE: That's correct. On  
12 that -- on that page, I -- there is a -- a second page  
13 that carries on.

14 MR. BOB PETERS: And -- and if I'm  
15 looking at page 103, I -- I think it's likewise,  
16 nothing is included on the planning horizon at this  
17 point in time. Have -- would that be a correct  
18 interpretation?

19 MR. DAVID CORMIE: I think the purpose  
20 of this chart is to show -- whether we need them or  
21 not, this is the -- this is the supply and demand  
22 balance, assuming no new resources are put in.

23 MR. BOB PETERS: So let's go back,  
24 please, to page 102, and we look under "base power  
25 supp -- base supply power resources," in the left-hand

1 column. The existing and committed Hydro reflects the  
2 plants that Manitoba Hydro has online, plus what's  
3 going to be coming online, particularly, the -- the  
4 Keeyask project, correct?

5 MR. DAVID CORMIE: That's correct.

6 MR. BOB PETERS: And under the thermal  
7 resources -- well, before we get there, is -- is the -  
8 - I'm not sure if this is -- if it's -- is it the  
9 mothballing of Pointe du Bois, is that reflected in  
10 the supply and demand tables.

11 MR. DAVID CORMIE: I believe, Mr.  
12 Peters that we're assuming that four (4) units at  
13 Pointe du Bois are unavailable for service in this  
14 table.

15 MR. BOB PETERS: And does that carry  
16 forward into the forecast of export volumes in the  
17 integrated financial forecast?

18 MR. DAVID CORMIE: I think, Mr.  
19 Peters, it's better if Mr. Miles speaks to the issue  
20 of Pointe du Bois.

21 MR. BOB PETERS: I'd be pleased. If  
22 he wants the microphone from the back, or do you want  
23 him at the front row, Ms. Ramage?

24 MS. PATTI RAMAGE: We have Mr. Miles  
25 here. He hasn't been sworn, and we're ready for that,

1 but if Mr. Simonsen would like to come over and swear  
2 him, he can speak from the back row.

3 MR. BOB PETERS: Okay. Thank you.

4

5 TERRY MILES, Sworn

6

7 CONTINUED BY MR. BOB PETERS:

8 MR. BOB PETERS: Good morning, Mr.  
9 Miles. I think the panel would appreciate your  
10 update, then, on the Pointe du Bois and how it's been  
11 treated in the -- in the power resource planning.

12 MR. TERRY MILES: Okay. Well, good  
13 morning, everyone. So Pointe du Bois in this -- in  
14 this plan has been treated not going ahead with four  
15 (4) unit refurbishments moving forward. We were  
16 intending on having four (4) units in Pointe du Bois  
17 upgraded, if you will, and carry those on for probably  
18 thirty (30), forty (40) years into the future.

19 We've re-looked at those options, and  
20 given the capital costs, given the market value, and  
21 given our re-look at capital, we have chosen not to  
22 include those costs in our current budgeting and  
23 planning right now. So as a result, then, we've  
24 removed that work on a go-forward basis.

25 So under this plan, it assumes that in

1 the -- I think it's in the 2021 or 2022 timeframe,  
2 that then the existing units at Pointe du Bois will  
3 receive significant enough failures that we wouldn't  
4 refurbish them, and that would be considered as we go  
5 over in -- in time, but one (1) unit would remain.  
6 There's one (1) unit that is still in good working  
7 condition. It's this draft flow unit. That's an 8  
8 megawatt unit that will then continue on for the  
9 planning horizon.

10 As a result of that, what happens then  
11 on the dependable side, which is probably what you're  
12 looking at, there's about 221 gigawatt hours of  
13 generation that would come from those other three (3)  
14 units that were -- that were there, and as a result,  
15 then, there's a reduction in dependable energy from  
16 Pointe du Bois.

17 MR. BOB PETERS: And thank you, Mr.  
18 Miles. So Pointe du Bois has had its capacity dropped  
19 from the previous 75 megawatts down to the current  
20 thirty-three (33), and you're indicating it's going to  
21 go down as low as 8 -- 8 megawatts?

22 MR. TERRY MILES: That's correct.

23 MR. BOB PETERS: And while we're on  
24 it, the Selkirk Thermal Plant appears limited to 33  
25 megawatts because of transmission constraints? And I

1 don't know if the panel's heard of those before. Is  
2 that a new phenomenon?

3 MR. TERRY MILES: It -- it's not a new  
4 phenomenon. In the -- in the last Power Resource  
5 Plan, we'd assume that there would be upgrades for  
6 those transmission constraints that would increase the  
7 capacity of Selkirk from about 33 megawatts up to 125  
8 megawatts.

9 Again we're revisiting those  
10 expenditures and have taken them out of our -- of our  
11 forecast plan going forward. And as a result, then,  
12 we've taken, then, the increase from 33 megawatts up  
13 to 125 megawatts out of our plan, and that's what's  
14 reflected in the tables.

15 And it's essentially because we don't  
16 have those in our plan to do maintenance, we can't  
17 include them in our plan, and from a transmission  
18 reliability perspective, we're unable to include that  
19 additional capacity until such a time as we have those  
20 transmission upgrades.

21 And what happens periodically is a  
22 transmission -- we'll do system studies that look at  
23 load changes in the system and generation, and  
24 depending on where load changes, so you could have a  
25 big industrial customer, say, on the Winnipeg River

1 somewhere, or elsewhere in the Province, and that  
2 changes the load dynamic, and it changes how the  
3 transmission system works. And when they do their  
4 studies, the balance of load in this case only allows  
5 33 megawatts of Selkirk really to be usable under --  
6 there's certain loading conditions that they study.

7                   So that's essentially what caused us to  
8 go to the reduced -- the reduced loading, and then  
9 revisiting capital caused us to take those  
10 expenditures out of our plan. And we'll reconsider  
11 them. It doesn't mean it's off the table. It just  
12 means currently it's not in the plan and we don't have  
13 things in the budget for that.

14                   MR. BOB PETERS:    If we could turn to  
15 page 98, and Mr. Miles, perhaps you can assist here as  
16 well. We're -- we're switching to the capacity  
17 resources, and I think we see perhaps more accurately  
18 that Brandon Coal, or Unit 5 is scheduled for  
19 decommissioning in 2019, is that correct?

20                   MR. TERRY MILES:    So Brandon Unit 5  
21 Coal operations, so Brandon Unit 5 is a coal unit.  
22 It's a coal-fired thermal unit. And in -- at the end  
23 of 2018, we've -- timing essentially with -- with  
24 Bipole III coming into service, Brandon Unit 5 as a  
25 reliability resource will no longer be required, and

1 coal operation will be ceased.

2                   The Unit itself, the generation  
3 equipment will be -- will be used as a synchronous  
4 condenser on a go-forward basis to provide  
5 transmission system support in the area. So the Unit  
6 will -- will still be used. It's just we won't be  
7 using it as a coal unit. It basically acts as a motor  
8 to provide stability to the electrical system.

9                   MR. BOB PETERS: But Unit 5 is still  
10 needed for emergency operations?

11                   MR. TERRY MILES: Unit 5 will not be  
12 operated at all for generation after 2018/'19 until  
13 such time as changes to the generation system would be  
14 made. It will not have a generation capability beyond  
15 that.

16                   MR. BOB PETERS: On the same chart on  
17 page 98 of Board counsels' book of documents number  
18 four, it appears that wind is now counting towards  
19 winter peak capacity. Is that correct?

20                   MR. TERRY MILES: That's correct.

21                   MR. BOB PETERS: And wind is not a dep  
22 -- I -- maybe I'll ask it this way. Is wind a  
23 dependable resource?

24                   MR. TERRY MILES: Wind, from an energy  
25 perspective, is a dependable resource, yes. So in --

1 over -- over the course of the year, actually, wind --  
2 wind -- we can rely on wind to provide a certain  
3 amount of energy over the course of the year.

4 MR. BOB PETERS: But you just can't  
5 dispatch it when you want it?

6 MR. TERRY MILES: You can't necessary  
7 dispatch it when you want it, but that doesn't mean  
8 that it can't provide some capacity value at -- when  
9 our peak load occurs in the winter. Initial  
10 assumptions with wind were that there wouldn't be  
11 sufficient generation at the peak load times in -- in  
12 the wintertime, and experience has shown that we can  
13 allocate a certain amount of capacity resource to  
14 wind, because it is there at times. And that's based  
15 on our number of years of experience with the wind and  
16 observing it in Manitoba under our -- our loading  
17 conditions. So that's where that capacity amount has  
18 been.

19 There's always been some in the  
20 summertime for the market case. There were always  
21 cold weather restrictions attached to the -- to the  
22 wind components, and it's in the order of, you know,  
23 below minus thirty (30) or minus thirty-five (35).  
24 The units, actually -- the -- the wind units that --  
25 they have the turbines aren't guaranteed to operate,

1 and that's sort of a mechanical aspect of it.

2                   But I think what we see is if they are  
3 operating and they are going, the temperature inside  
4 the wind turbine in the unit that's there is actually  
5 a little warmer than it is outside, so it's able to  
6 operate if they are operating. I believe if they  
7 weren't operating, and you had to start them up, they  
8 wouldn't be able to start up below that minus thirty  
9 (30) or minus thirty-five (35). So based on  
10 operational experience, we've adjusted that capacity  
11 factor in the winter, and allow that -- allow that.

12                   MR. BOB PETERS: In that answer, Mr.  
13 Miles, I -- I think I heard you saying if it's too  
14 cold, these units might not work unless they're  
15 already idling. Is that, in essence, what you're  
16 saying?

17                   MR. TERRY MILES: Unless they're  
18 actually operating, yeah.

19                   MR. BOB PETERS: And to reflect wind  
20 as being a dependable resource, Manitoba Hydro has had  
21 to reduce its expectations of what would be available?  
22 Would that also be correct?

23                   MR. TERRY MILES: From an energy or  
24 capacity perspective?

25                   MR. BOB PETERS: From a capacity

1 perspective.

2 MR. TERRY MILES: Sp from the capacity  
3 perspective, it's -- it is based on our experience and  
4 the operation of the wind turbine.

5 MR. BOB PETERS: And Manitoba Hydro's  
6 relying on historical data or statistical calculations  
7 to provide it with the confidence level to include it  
8 in its dependable energy?

9 MR. TERRY MILES: Essentially.

10

11 (BRIEF PAUSE)

12

13 MR. BOB PETERS: If we could turn back  
14 briefly to page 102, and we'll scroll to the bottom  
15 two-thirds of this -- this chart.

16 Would it be correct, Mr. Cormie, in the  
17 -- the bottom third, you're telling this Board what  
18 Manitoba Hydro's domestic load is going to be expected  
19 to -- to consume?

20 MR. DAVID CORMIE: Yes, that's the --  
21 the base load forecast less the DSM forecast pres --  
22 results in the Manitoba net load.

23 MR. BOB PETERS: And this was -- as  
24 Ms. Morrison had explained to the Board --

25 MR. DAVID CORMIE: Yes.

1                   MR. BOB PETERS:    -- last week?  And  
2 then Manitoba Hydro also has -- and you can see  
3 highlighted -- the net load.  The net load number, Mr.  
4 Cormie, is -- is the net of the    MS. DAYNA STEINFELD:  
5 -- demand-side management?

6                   MR. DAVID CORMIE:    Correct.

7                   MR. BOB PETERS:    And then once we know  
8 what Manitoba's load is, Manitoba Hydro also then has  
9 to add in what it's committed to provide by way of  
10 exports, export contracts that you've had arranged,  
11 correct?

12                  MR. DAVID CORMIE:    Correct.

13                  MR. BOB PETERS:    And under the  
14 proposed exports, nothing's on the short-term horizon,  
15 it doesn't appear, Mr. Cormie.  Is that also correct?

16                  MR. DAVID CORMIE:    That's correct.

17                  MR. BOB PETERS:    But then less adverse  
18 water.  And can you briefly explain to the panel why  
19 Manitoba Hydro is reducing its total energy demand by  
20 an amount related to adverse water?

21                  MR. DAVID CORMIE:    Adverse water  
22 conditions, Mr. Peters, exist in several of our export  
23 contracts that allow us to serve our sale obligations  
24 under -- under these extreme conditions by purchasing  
25 energy from the company who we're selling energy to.

1 So in effect, they're self-supplying energy under  
2 those conditions.

3 So it's not energy that Manitoba Hydro  
4 has to have on its system. It can rely on the  
5 contract provisions to meet its obligation to the  
6 customer. So in -- in effect, it reduces the -- our  
7 obligation in -- that's served from Manitoba. The  
8 obligation still has to be met, but it can be met  
9 through a purchase from the export customer.

10 MR. BOB PETERS: So the -- just to be  
11 clear, when Manitoba Hydro -- and this chart depicts  
12 the -- the worst historical drought that Manitoba has  
13 had. You're indicating that Manitoba Hydro still has  
14 to fulfil contractual arrangements, but it doesn't  
15 necessarily have to come from Manitoba electrons?

16 MR. DAVID CORMIE: That's correct. So  
17 if you look at the first column, it shows we have  
18 contracted for 3,410 gigawatt hours. We still have to  
19 provide that electricity in that year, but 370 of  
20 those gigawatt hours can be purchased from the export  
21 customer. And so it's being purchased off a generator  
22 in Minnesota rather than being supplied from a  
23 generator in Manitoba, so it doesn't need to show up  
24 in our supply and demand balance for Manitoba.

25 MR. BOB PETERS: And I'm not wanting

1 to go anywhere near commercially-sensitive  
2 information, Mr. Cormie, but does Manitoba Hydro have  
3 export contracts that will limit the amount that  
4 Manitoba Hydro has to export when it is in a drought,  
5 other than through adverse water?

6 MR. DAVID CORMIE: Yes, there are -  
7 - there are contracts where when Manitoba Hydro  
8 normally would have an obligation to supply, for  
9 example, energy on the weekend under the contract. We  
10 have the right not to supply that, and we would have  
11 to demonstrate to our customer that we're in that --  
12 in that condition described generally as being in  
13 adverse water. And we would -- with the -- we would  
14 then be able to exercise our right not to deliver.

15 MR. BOB PETERS: Mr. Cormie, the last  
16 line on this sheet talks system surplus.

17 Do you see that?

18 MR. DAVID CORMIE: I see that, yes.

19 MR. BOB PETERS: Going from my memory,  
20 and you can correct me in front of the panel if you  
21 choose, that the Keeyask generating station is to add  
22 approximately 3,000 gigawatt hours a year of energy.

23 Do you accept that?

24 MR. DAVID CORMIE: Yes, I accept that.

25 MR. BOB PETERS: So when the panel

1 looks at this last line on page 102, which is in -- on  
2 the monitor, for every year in which the surplus  
3 exceeds 3,000 gigawatt hours, those would be years in  
4 which the energy from Keeyask wouldn't technically be  
5 needed to serve Manitoba's domestic load as well as  
6 their net export load.

7 MR. DAVID CORMIE: Not exactly, Mr.  
8 Peters, because the Keeyask project was developed in  
9 conjunction with the new US interconnection, so the U  
10 -- the new US interconnection provides dependable  
11 energy as well. And so you have to think of them as a  
12 package. You can't just attribute all the surplus to  
13 -- to Keeyask. There's a combination of both projects  
14 that result in an increase in dependable energy, or an  
15 increase in the system surplus that's shown on this  
16 table.

17 MR. BOB PETERS: Well, let's -- let's  
18 turn to page 103, the next page, and look at the  
19 bottom line, Mr. Cormie. And I suppose much like the  
20 checkbook there's some red ink showing up here. And  
21 it's in the -- if we can look at the top part of it.  
22 I believe it's in 2040? Yes.

23 If we can now scroll back to the bottom  
24 in 2039/2040, we see that the system surplus has  
25 turned negative; correct?

1 MR. DAVID CORMIE: Yes.

2 MR. BOB PETERS: And so that's telling  
3 Manitoba Hydro that if this is a persistent problem,  
4 Manitoba Hydro has to find some way to address that  
5 persistent shortfall, otherwise, it can't meet its  
6 total energy requirements.

7 MR. DAVID CORMIE: Yes. Under the  
8 assumptions associated with the table, yes. But both  
9 the Keeyask project and the new interconnection have  
10 moved that date of new need out into the 2040. It's  
11 not just the Keeyask project that's done that.

12 MR. BOB PETERS: Oh, I have --

13 MR. DAVID CORMIE: Absent both  
14 projects, it would be much earlier than that.

15 MR. BOB PETERS: Are you able to  
16 indicate how much earlier?

17 MR. TERRY MILES: It's in the order of  
18 2032/'33.

19 MR. BOB PETERS: I'm sorry, Mr. Miles?

20 MR. TERRY MILES: It's in the order of  
21 2032 -- 2032 time frame, that early 2030 time frame.  
22 It varies depending on assumptions that are -- that  
23 are there.

24 MR. BOB PETERS: Cut can you explain  
25 then, Mr. Cormie, what dependable energy comes from

1 the intertie by itself?

2 MR. DAVID CORMIE: The -- yeah, the  
3 new interconnection increases our import capability by  
4 700 megawatts. So it essentially doubles it from 700  
5 megawatts to 1,400 megawatts. And we count on a  
6 portion of that to add to the dependable energy supply  
7 of the system.

8 And so it's a -- it's -- it's the  
9 dependable energy that comes from Keeyask plus the  
10 dependable energy that comes from the new  
11 interconnection that -- that provides the overall  
12 dependable supply.

13 MR. BOB PETERS: Are the two (2),  
14 Keeyask and the intertie, additive in terms of  
15 dependable energy?

16 MR. DAVID CORMIE: Yes, but they're --  
17 but -- but what you couldn't have had one (1) without  
18 the other. That's what I'm saying. They're linked.  
19 Like, we could -- we wouldn't have built Keeyask  
20 without building the interconnection.

21 MR. BOB PETERS: I remember the NFAT.  
22 Mr. Cormie, what you're telling the panel is that  
23 because you have now -- Manitoba Hydro now has an  
24 additional 700 megawatts of import capability under  
25 the new interconnection, Manitoba Hydro can, for

1 example, import into Manitoba at night and keep water  
2 in your reservoirs.

3 MR. DAVID CORMIE: We would import at  
4 night to serve the load demands under these low water  
5 conditions. We wouldn't -- we would -- we wouldn't  
6 just import to put it in the reservoirs. We'd import  
7 it to serve the load.

8 MR. BOB PETERS: I'm sorry then. So  
9 in terms of this -- these charts that we're looking  
10 at, this is the -- the worst year on record. So the  
11 reason for using the intertie would be to serve the  
12 Manitoba load, not just for enhancing storage  
13 capability.

14 MR. DAVID CORMIE: Yes. Serving it on  
15 a -- on a dependable basis. We -- we essentially  
16 guarantee that we'll be able to call on that 700  
17 megawatts a certain percentage of the time to -- to  
18 serve our -- our needs. As opposed to building  
19 another generating station we can count on the import  
20 capability.

21 MR. BOB PETERS: All right. If we can  
22 go back to page should 98. This deals with the  
23 capacity side in the same -- in the same drought  
24 scenario; does it, Mr. Cormie?

25 MR. DAVID CORMIE: This is the -- the

1 cap capacity table, yes. And it's -- rather than the  
2 drought scenario, Mr. Peters, it's -- it's the winter  
3 peak demand, and it also includes the planning  
4 criteria that we maintain as re -- sufficient reserves  
5 as defined by our planning criteria.

6 MR. BOB PETERS: And you're telling  
7 the panel that this is an important chart, because  
8 Manitoba Hydro is a winter peaking utility, and we saw  
9 little bit of that weather this morning; correct?

10 MR. DAVID CORMIE: Yes.

11 MR. BOB PETERS: And if we -- if we  
12 look at the generation outages over system peak line  
13 item, what does that reflect, Mr. Cormie?

14

15 (BRIEF PAUSE)

16

17 MR. DAVID CORMIE: Mr. Peters, that is  
18 a planned generating -- generation outage that we know  
19 today will occur in that year, and -- and we're  
20 planning for that.

21 MR. BOB PETERS: And it's a planned  
22 outage for servicing or for...

23 MR. DAVID CORMIE: I don't know the  
24 details of it. It's just that that capacity which we  
25 would normally expect to be there is -- is not going

1 to be there that winter.

2 MR. BOB PETERS: Looking at the bottom  
3 line on page 98, Mr. Cormie, much like we saw with the  
4 energy, we can follow out here and see what the system  
5 surplus is.

6 And remind us again, Keeyask is 630  
7 megawatts.

8 MR. DAVID CORMIE: That's the net  
9 addition. Yes, that's correct.

10 MR. BOB PETERS: So on that bottom  
11 line on system surplus, is it every year in which the  
12 system surplus exceeds 630 would be indicative of a  
13 year in which the capacity of Keeyask wouldn't be  
14 required in this dependable example?

15 MR. DAVID CORMIE: That's correct.

16 MR. BOB PETERS: If we follow over to  
17 page 99 --

18 MR. TERRY MILES: Mr. Peters, could I  
19 also add just a note to that just for the Board?

20 MR. BOB PETERS: Please.

21 MR. TERRY MILES: So these tables  
22 assume a number of assumptions. So we assume that our  
23 system will remain intact. All of our bay system will  
24 -- will be there. We talked about an outage, this 15  
25 megawatt outage of a unit. So these tables assume

1 that we're doing all the maintenance and all those  
2 types of things into the future to remain -- keep our  
3 whole system intact. So that's the whole, you know,  
4 5,000 plus megawatts of existing system impact between  
5 now and the mid-'20s. That's twenty (20) years out  
6 into the future.

7                   It also assumes that we achieve the DSM  
8 savings and targets out at that time frame that we go  
9 in time to as well. So not to think of it at any --  
10 any one (1) component that's there. We can draw the  
11 inference and say it's 630 megawatts for Keeyask and -  
12 - and do that math. That's a mathematical exercise,  
13 but I think we need to understand the base assumptions  
14 and what's sort of required and -- and what will be  
15 there, if you will, out at that time frame. Just to  
16 give a little more context around the assumptions  
17 behind the plan.

18                   MR. BOB PETERS: Okay. Well, let's  
19 turn to page 99 of Board counsels' fourth book of  
20 documents, and look at the bottom line in the year --  
21 I see it in the year 2041/2042.

22                   That's when there is a 56 megawatt  
23 shortfall that first appears; correct, Mr. Cormie?

24                   MR. DAVID CORMIE: Yes.

25                   MR. BOB PETERS: And this would be the

1 beginning of where -- where Manitoba Hydro sees  
2 persistent shortfalls in their system planning under  
3 dependable conditions?

4 MR. DAVID CORMIE: With the exception  
5 of the -- using the word "dependable." It -- it is  
6 the year that -- that we would see persistent deficits  
7 under the assumptions that the table is prepared on.

8 MR. BOB PETERS: And Manitoba Hydro  
9 isn't proposing any new generation to meet that  
10 deficit; is that right?

11 MR. DAVID CORMIE: Not at this time.  
12 This table is -- is based on the assumption that we  
13 wouldn't put in -- we're not putting in -- we're not -  
14 - we're not putting -- planning on any resources.  
15 This -- the table just says, If we did nothing and our  
16 assumptions proved to be true, this is when we would  
17 see that shortfall, yes.

18 MR. BOB PETERS: And so what would  
19 Manitoba Hydro's assumption be if Manitoba Hydro had  
20 to do something for 2042?

21 MR. DAVID CORMIE: I don't know.  
22 That's a long way away, Mr. Peters. I'm not sure what  
23 my -- our children might be deciding to do at that  
24 time.

25 MR. BOB PETERS: So at this point in

1 time, for planning assumptions, Manitoba Hydro has  
2 sufficient time to consider its options and do its  
3 integrated resource planning and come up with some  
4 ideas?

5 MR. DAVID CORMIE: Yes, there's --  
6 there's no need to make a decision today to -- when --  
7 based -- based on these assumptions.

8 MR. BOB PETERS: And so these  
9 assumptions that we see include the Keeyask generating  
10 station; correct?

11 MR. DAVID CORMIE: That's correct.

12 MR. BOB PETERS: So post Keeyask no  
13 new resources are needed until, as shown here, 2042?

14 MR. DAVID CORMIE: Based on the  
15 assumptions that this table has made.

16 MR. BOB PETERS: Are --

17 MR. DAVID CORMIE: But as -- as Mr.  
18 Miles indicated, we assume our DSM program is fully  
19 effective. We assume the load forecast here is as  
20 expected. Imagine the DSM is less effective or the  
21 Manitoba load were to be the high Manitoba load, then  
22 resources would be required earlier than that.

23 MR. BOB PETERS: Thank you. I want to  
24 turn, still before the morning recess if I could, to a  
25 topic of risks and I'll come back I think, Mr. Cormie,

1 to you with some additional questions shortly. But  
2 one (1) of the reasons Manitoba Hydro is requesting  
3 7.9 percent rate increases is in order to withstand  
4 the negative impacts of uncertainties in the forecast.

5                   Would -- would that be correct, Ms.  
6 Carriere or Mr. McCallum?

7                   MS. LIZ CARRIERE:     That would be  
8 correct.

9                   MR. BOB PETERS:     If we turn to volume  
10 4, page 134, Exhibit PUB-42-4, Manitoba Hydro has  
11 provided the Board with an uncertainty analysis.

12                   Would that be the right way to describe  
13 that, Ms. Carriere?

14                   MS. LIZ CARRIERE:     I would  
15 characterize this table on page 134 as sensitivities  
16 to certain variables.

17                   MR. BOB PETERS:     All right. Let's go  
18 down to -- on the chart to the five (5) year drought  
19 line. And it says a five (5) year drought.

20                   Have you located that, ma'am?

21                   MS. LIZ CARRIERE:     Yes.

22                   MR. BOB PETERS:     And we follow that  
23 over and we see that in 2024 Manitoba Hydro is telling  
24 the Board that if it had a five (5) year drought  
25 Manitoba Hydro's retained earnings would be \$1.388

1 billion less than what is presently forecasted in  
2 Manitoba Hydro's integrated financial forecast 16.

3 MS. LIZ CARRIERE: Yes, if no rate  
4 action is taken.

5 MR. BOB PETERS: Well, let me -- let  
6 me understand that. Is it no rate action is taken or  
7 Manitoba Hydro is on the rate trajectory that's  
8 proposed in integrated financial forecast 16 updated  
9 with interim?

10 MS. LIZ CARRIERE: Yes, this  
11 sensitivity to determine the retained earnings impact  
12 holds the -- the rate trajectory 7.9 percent constant.  
13 What I meant was, is that there is no compensatory  
14 rate action taken to recover the \$1.4 billion.

15 MR. BOB PETERS: All right. You're  
16 telling the panel that if the five (5) year drought  
17 hit and Manitoba Hydro's rate increases were as  
18 proposed by Manitoba Hydro, the retained earnings  
19 would be down \$1.388 billion dollars from what's  
20 filed?

21 MS. LIZ CARRIERE: That's correct.

22 MR. BOB PETERS: All right. We'll  
23 come back to the rate action question. If we turn to  
24 page 135 and stay with the -- well, we'll turn there,  
25 135.

1                   Is the Board to understand that drought  
2 is the most significant risk that Manitoba Hydro  
3 faces?

4                   MR. JAMES MCCALLUM:    I wouldn't  
5 necessarily characterize it that way.  Certainly, the  
6 -- as you look to a five (5) year impact, or a ten  
7 (10) year impact we don't see a greater diminution in  
8 financial condition from other variables as we see  
9 with drought.  But looking over the longer term my  
10 point of view would actually be that debt and interest  
11 rate volatility are our greatest risk to the long-term  
12 health of the company and long-term rate stability.

13                  MR. BOB PETERS:    Okay.  We'll -- we'll  
14 come back to that thought, Mr. McCallum, in a few  
15 minutes.

16                  But from a financial perspective under  
17 these sensitivities, Manitoba Hydro is showing that  
18 the five (5) year drought or the seven (7) year  
19 drought is the one (1) that has the greatest impact on  
20 the retained earnings?

21                  MR. JAMES MCCALLUM:    That is true.  
22 I'm just trying to make clear that that is over a  
23 discrete period of time.  The benefit, I guess, of a  
24 drought is that presumably at some point it will end  
25 and the damage will stop.  The issue with interest

1 rates is that depending on where you are on a -- more  
2 of a cyclical basis you could end up chasing rates  
3 higher and higher for years to come.

4 MR. BOB PETERS: If we turn to page  
5 135, which is on the monitors in front of us, would it  
6 be correct that Manitoba Hydro is showing the Board  
7 that if a five (5) year drought hits starting in  
8 2019/'20, or alternatively, if it started in '22/'23,  
9 the financial impact on retained earnings is  
10 approximately the same \$1.4 billion, Ms. Carriere?

11 MS. LIZ CARRIERE: Approximately, yes,  
12 that's correct.

13 MR. BOB PETERS: And then if we look  
14 at the seven (7) year drought, and again different  
15 starting dates, that has an impact of somewhere  
16 between 1.8 and \$2 billion on the retained earnings?

17 MS. LIZ CARRIERE: Yes, that's  
18 correct.

19 MR. BOB PETERS: Now, I'll do it with  
20 one (1). I didn't want to do it with many, but on  
21 page 136 of Board counsels' book of documents,  
22 Manitoba Hydro has provided the integrated financial  
23 forecast runs that suppose a five (5) year drought  
24 occurs starting in 2019/'20; correct?

25 MS. LIZ CARRIERE: That's correct.

1 MR. BOB PETERS: Now, is it also  
2 correct that if we look at those -- that statement  
3 most of the years during the drought Manitoba Hydro  
4 still manages a positive net income?

5 MS. LIZ CARRIERE: Assuming the rate  
6 trajectory of 7.9 percent, that's correct. We only  
7 see financial losses in 2020 and 2021.

8 MR. BOB PETERS: So when Manitoba  
9 Hydro says that the impact of the drought is in the  
10 neighbourhood of \$1.4 billion, what it's telling the  
11 Board is that it's not that the retained earnings are  
12 going to be depleted from where they currently are.  
13 It's just that they're not going to grow as much as  
14 Manitoba Hydro had forecast they would grow under the  
15 rate trajectory that Manitoba Hydro proposes?

16 MS. LIZ CARRIERE: No, I would say  
17 they're depleted because you're dropping down from --  
18 if we go back to page -- I forget the page now -- 134.  
19 You can see the base -- the base case MH16 update with  
20 interim by the end of the drought is \$5 1/2 billion.  
21 Or, sorry, \$4.9 billion, nearly \$5 billion. And under  
22 a drought case that would be \$1.4 billion lower.

23

24

(BRIEF PAUSE)

25

1                   MR. BOB PETERS:    I understand your  
2 clarification, Ms. Carriere.  You're telling the Board  
3 that compared to what Manitoba Hydro was forecasting,  
4 a drought would reduce the retained earnings from what  
5 was forecast by Manitoba Hydro?

6                   MS. LIZ CARRIERE:    That's correct.

7                   MR. BOB PETERS:    Now, if we look to  
8 the bottom part of the page that you brought us to at  
9 page 134, and we go down to the -- the line that talks  
10 about a five (5) year drought starting in -- it's  
11 '19/'20, that row depicts what is actually happening -  
12 - happening to the retained earnings account of  
13 Manitoba Hydro during the drought; correct?

14                  MS. LIZ CARRIERE:    Correct.  That's  
15 the -- for that sensitivity your absolute level of  
16 retain -- or retained earnings will be \$3.6 billion.

17                  MR. BOB PETERS:    But it starts off at  
18 2.9.  There is a -- you notice -- you brought to our  
19 attention the -- the one (1) year decline.  And then  
20 it climbs slowly up to \$3.58 billion; correct?

21                  MS. LIZ CARRIERE:    Yes, I -- I see  
22 your point, Mr. Peters, that you are going to \$3.6  
23 billion.  But at the same time we are seeing net debt  
24 growing as well to compensate for that -- for the loss  
25 re -- retained earnings.

1 (BRIEF PAUSE)

2

3 MR. BOB PETERS: If we turn to page  
4 149, we see a similar scenario runs. But this time,  
5 Ms. Carriere, instead of Manitoba Hydro's assumed rate  
6 trajectory of seven-point-nine-zero (7.90), Manitoba  
7 Hydro has assumed three-point-nine-five (3.95);  
8 correct?

9 MS. LIZ CARRIERE: That's correct.

10 MR. BOB PETERS: And at the bottom  
11 part of the table, we can also see the incremental  
12 decrease in retained earnings is roughly the same at  
13 \$1.4 billion, as it was with the other rate plan on  
14 page 134?

15 MS. LIZ CARRIERE: Yes, that's  
16 correct.

17 MR. BOB PETERS: However, it appears  
18 when Manitoba Hydro ran the scenarios that -- and I'm  
19 looking at, I believe, page 150. Well, let's go 1 --  
20 152.

21 In these years under the rate  
22 trajectory of three-nine-five (395) Manitoba Hydro's  
23 net income turns negative for most of those five (5)  
24 ears?

25 MS. LIZ CARRIERE: That's correct.

1 MR. BOB PETERS: And that's a function  
2 of having less rate increase revenue to buffer against  
3 that drought; correct?

4 MS. LIZ CARRIERE: That would be  
5 correct.

6 MR. BOB PETERS: Now, back to page  
7 134, I just want to maybe conclude on this with you  
8 this morning. In the far right-hand column, it reads:

9 "Incremental annual electric rate  
10 increase/decrease required.

11 Do you see the column, Ms. Carriere?

12 MS. LIZ CARRIERE: That's -- yes.  
13 1.29 percent.

14 MR. BOB PETERS: And you had  
15 previously told the panel that the retained earnings  
16 would go down, and I'm gonna go to that to 2024  
17 column, \$1.4 billion, \$1.388 billion. And you said if  
18 no, I believe, additional rate relief was provided.

19 MS. LIZ CARRIERE: That's right.

20 MR. BOB PETERS: So if we go over to  
21 the right-hand side we see that the incremental annual  
22 electric rate increase required is 1.29 percent?

23 MS. LIZ CARRIERE: Yes, that would be  
24 an even annual amount over and above the rates  
25 projected from 2019/'20 to '27/'28. So there's about

1 -- there's nine (1) -- eight (8) or nine (9) years of  
2 1.29 percent required to get you to about the same  
3 level of retained earnings as the base case under two  
4 (2) -- 2027/'28.

5 MR. BOB PETERS: Is that a -- so just  
6 in my language, in addition to the seven-nine-zero  
7 (790) rate increases and then the four-five-two (452)  
8 then the 2 percent numbers that are in Manitoba  
9 Hydro's IFF16 updated with in -- interim, you're  
10 telling the panel Manitoba Hydro would need an  
11 additional 1.29 percent annual rate increase to keep  
12 it on the same financial track?

13 MS. LIZ CARRIERE: That's right.

14 MR. BOB PETERS: And this 1.29 percent  
15 of additional rate increase would be in each and every  
16 year for those eight (8) years that you mentioned?

17 MS. LIZ CARRIERE: Yes, that's right.

18 MR. BOB PETERS: Before I leave this  
19 table...

20

21 (BRIEF PAUSE)

22

23 MR. BOB PETERS: Ms. Carriere, on this  
24 chart you've shown a number of sensitivities and their  
25 impacts on retained earnings, and they should be

1 understood similarly to how you've explained the  
2 details of the five (5) year drought; correct?

3 MS. LIZ CARRIERE: That's correct.

4 MR. BOB PETERS: Now, if we go to that  
5 far right-hand column, and I'll make this up, we see a  
6 five (5) year drought starting in '19/'20. You're  
7 telling the Board that to hold Manitoba Hydro whole  
8 accor -- according to its current IFF16 updated plus  
9 interim plan, you'd need an extra 1.29 percent on top  
10 of the rate increases already in that plan?

11 MS. LIZ CARRIERE: That's correct.

12 MR. BOB PETERS: Now, if I layer on  
13 top of that hypothetical situation the high export  
14 price line item that's just above it, and that assumes  
15 just for argument's sake that Mr. Cormie goes and  
16 finds some attractive export contracts, or the export  
17 market improves in the MISO region, and Manitoba  
18 Hydro's export revenues are high, we see that there's  
19 a negative one-point-two-six (1.26) rate impact with  
20 that item.

21 Are you with me?

22

23 (BRIEF PAUSE)

24

25 MS. LIZ CARRIERE: I see that, but I'd

1 caution that the two (2) cases are not additive. You  
2 -- under a drought with high export prices, you would  
3 have actually a higher cost of drought.

4 MR. BOB PETERS: And maybe it's  
5 because I picked -- are you saying that none of these  
6 are additive on this chart, or just the two (2) that I  
7 happened to highlight?

8 MS. LIZ CARRIERE: I -- yeah, I -- I  
9 couldn't say that these are -- any of these cases are  
10 additive.

11 MR. BOB PETERS: What you can say is  
12 that if Manitoba Hydro uses its IF -- its integrated  
13 financial forecast 16 updated with interim with a 7.9  
14 percent rate increases, and there is also high export  
15 price, Manitoba Hydro rates would be 1.26 percent too  
16 high on each of those eight (8) years to achieve the  
17 exact number that Manitoba Hydro was striving for?

18

19 (BRIEF PAUSE)

20

21 MS. LIZ CARRIERE: If you look at the  
22 -- the low export price case in isolation, your --  
23 your rates could be on average 1.26 percent lower  
24 conceptually.

25 MR. BOB PETERS: You meant the high

1 export price?

2 MS. LIZ CARRIERE: Yes, sorry. The  
3 high export --

4 MR. BOB PETERS: Yes, and that was my  
5 point, is that you're just telling the panel that  
6 instead of a 7.90 percent rate increase under high  
7 export, if the rate increase was 1.26 percent lower  
8 than that Manitoba Hydro would still be on target.

9 MS. LIZ CARRIERE: That's correct.

10 MR. BOB PETERS: All right. Last  
11 point I want to cover is there's a \$1 billion in  
12 capital overruns on this chart.

13 Do you see that, Ms. Carriere?

14 MS. LIZ CARRIERE: Yes, I see that.

15 MR. BOB PETERS: And I -- I think  
16 there was a -- an exchange between your president and  
17 the Board Chair about the P50, P90 costs related to  
18 Keeyask.

19 Were you aware of that?

20 MS. LIZ CARRIERE: Yes.

21 MR. BOB PETERS: So let's -- let's --  
22 right now Manitoba Hydro is saying that the P50, the  
23 probability of 50 percent cost being correct on  
24 Keeyask would lead them to believe that \$8.7 billion  
25 will be the completed cost of Keeyask.

1 MS. LIZ CARRIERE: That's correct.

2 MR. BOB PETERS: And if Hydro wanted  
3 more confidence in what number would absolutely  
4 provide greater certainty, not absolute certainty, but  
5 greater certainty and wanted to go to a 90 percent  
6 probability of what that number would look like, the  
7 number between the Chairman and your president was in  
8 the -- was either 9.6 or \$9.9 billion.

9 Do you remember that?

10

11 (BRIEF PAUSE)

12

13 MR. JAMES MCCALLUM: Yeah, let me just  
14 jump in. We had a few numbers bouncing around, as we  
15 always seem to. But the \$9.6 billion number reflects  
16 a -- when we -- when we approved the -- when the Board  
17 of Directors of Manitoba Hydro approved the new  
18 control budget for Keeyask, in that process we looked  
19 to the P90 estimate, which was \$9.6 billion. The \$9.9  
20 billion figure reflected a scenario we ran which also  
21 included a further delay in Keeyask to being a thirty-  
22 two (32) month delay from -- from its original in-  
23 service date, or an additional eleven (11) months from  
24 what's in the IFF16 here.

25 MR. BOB PETERS: All right. Thank you

1 for that, Mr. McCallum. So let's -- let's stick with  
2 Manitoba Hydro's P90 number, and that number remains  
3 9.6 billion today, Mr. McCallum?

4 MR. JAMES MCCALLUM: That's correct.  
5 Yes.

6 MR. BOB PETERS: All right. And it's  
7 approximately \$1 billion more than the 8.7 P50 number  
8 that is on the record here?

9 MR. JAMES MCCALLUM: Yes.

10 MR. BOB PETERS: All right. So let's  
11 follow, Ms. Carriere, that \$1 billion in capital  
12 overruns across.

13 And is Manitoba Hydro telling the Board  
14 that in addition to its 7.90 percent rate increase, it  
15 would need an additional 0.43 percent of a rate  
16 increase to hit the financial targets of IFF16 updated  
17 with interim?

18 MS. LIZ CARRIERE: That's correct.  
19 Spreading them evenly over that eight (8) -- eight (8)  
20 or nine (9) year period.

21 MR. BOB PETERS: Thank you. And Mr.  
22 McCallum brought up the scenario that perhaps led to  
23 some of the discussion as between the Chairman and  
24 your president. And back in Board counsels' volume 1  
25 of its book of documents on page 437 and 438, let's

1 turn to page 439, please. Sorry. And thank you.

2 Mr. McCallum, this was the integrated  
3 financial forecast that you were referencing when the  
4 -- the \$9.9 billion number surfaced. Would that be  
5 correct?

6 MR. JAMES MCCALLUM: You know, subject  
7 to check, I believe this scenar -- scenario reflects a  
8 \$9.9 billion in-service cost and an in-service date of  
9 -- I guess would be roughly September of 2022  
10 reflecting what we referred to as a thirty-two (32)  
11 month delay.

12 MR. BOB PETERS: And this came -- the  
13 Boston Consulting Group had first raised the sceptre  
14 (sic) that there could be a thirty-two (32) month  
15 delay.

16 Do you recall that, Mr. McCallum?

17 MR. JAMES MCCALLUM: Yes, I do.

18 MR. BOB PETERS: And layered on top of  
19 the thirty-two (32) month delay is the approximate  
20 billion dollars more in capital costs; correct?

21 MR. JAMES MCCALLUM: Recognizing that  
22 part of the reason for an increase in capital costs  
23 will actually be a -- a function of the delay in that  
24 we continue to capitalize interest to the project for  
25 another eleven (11) month period. So the -- the

1 underlying, you know, what you might call the hard  
2 costs of the project, you know, could -- could not --  
3 you know, you could -- for example, might not change  
4 at all. However, simply by delaying the in-service  
5 you're going to capitalize more interest and thus  
6 drive the final project cost higher, but --

7 MR. BOB PETERS: And the capital costs  
8 assumed on this IFF, subject to your check, Mr.  
9 McCallum, is the \$9.9 billion; correct?

10 MR. JAMES MCCALLUM: Inclusive of  
11 capitalized interest, yes.

12 MR. BOB PETERS: And we see that the  
13 percent increase on the rates across the row is the  
14 trajectory that Manitoba Hydro has put into its  
15 integrated financial forecast 16 updated with interim,  
16 7.9 for six (6) years, followed by 4.5, followed by 2  
17 percent and 2 percent?

18 MR. JAMES MCCALLUM: I see that.

19 MR. BOB PETERS: And is it also  
20 correct, then, that if -- if the Keeyask project was a  
21 billion dollars over its current price estimate that  
22 Manitoba Hydro would achieve a 24 percent equity in  
23 the 2027 year, the last year on the on the chart?

24 MR. JAMES MCCALLUM: That's what this  
25 scenario shows, yes.

1 MR. BOB PETERS: And that recognizes  
2 that this works with 9.9 billion as opposed to 9.6  
3 billion; correct?

4 MR. JAMES MCCALLUM: And also works  
5 with a different in-service date than the sensitivity  
6 analysis we just reviewed.

7 MR. BOB PETERS: Eleven (11) months  
8 later?

9 MR. JAMES MCCALLUM: Correct.

10 MR. BOB PETERS: All right. Thank  
11 you. Mr. Chairman, I appreciate the indulgence of the  
12 panel. This would be an appropriate time for the  
13 morning recess if it suits the panel.

14 THE CHAIRPERSON: Thank you. We'll  
15 take fifteen (15) minutes. Thank you.

16

17 --- Upon recessing at 10:51 a.m.

18 --- Upon resuming at 11:09 a.m.

19

20 THE CHAIRPERSON: Mr. Peters...?

21

22 CONTINUED BY MR. BOB PETERS:

23 MR. BOB PETERS: Thank you, Mr. Chair.

24 This morning --

25 MS. PATTI RAMAGE: Oh, Bob, sorry, if

1 I could just introduce -- I neglected to introduce  
2 Ms. Val Iderstine this morning when I dove in. Ms.  
3 Van Iderstine is also Manitoba Hydro counsel in this,  
4 and she will be dealing with anything to do with  
5 capital. So, as Mr. Peters bumps to capital we'll  
6 have our capital group move in and I will move out and  
7 Ms. Van Iderstine will move in just to let the Board -  
8 - let the panel know what's going on.

9 I also thought I should because, Mr.  
10 Chair, you asked at the beginning of the hearing for  
11 witnesses to state how long -- their experience at  
12 Manitoba Hydro. We sort of jumped Mr. Miles into the  
13 hearing without any of the panel members who weren't  
14 in the NFAT --

15 THE CHAIRPERSON: Mr. Miles has grey  
16 hair so I --

17 MS. PATTI RAMAGE: Well, he -- I can  
18 advise he's been with Manitoba Hydro twenty-five (25)  
19 years and eh is the Director of Power Planning so you  
20 are --

21 THE CHAIRPERSON: Thank you.

22 MS. PATTI RAMAGE: -- talking to a  
23 knowledgeable source.

24 THE CHAIRPERSON: Thank you.

25 MR. TERRY MILES: And I just add the

1 grey hair for effect actually, it's just -- it's not  
2 real.

3 THE CHAIRPERSON: Yeah, I add the  
4 baldness for effect too. Hasn't had much of an  
5 effect. Okay, Mr. Peters...?

6

7 CONTINUED BY MR. BOB PETERS:

8 MR. BOB PETERS: Thank you, Mr. Chair.  
9 This morning, Ms. Bauerlein, I had understood that  
10 approximately eight hundred and seventeen (817)  
11 Manitoba Hydro electric side employees will be  
12 departing the Company based on the voluntary departure  
13 program, correct?

14 MS. SANDY BAUERLEIN: That is correct.

15 MR. BOB PETERS: I understand from the  
16 materials filed that Manitoba Hydro has restructuring  
17 costs approximately 50 or \$53 million in its budget to  
18 deal with the costs related to those employees'  
19 departures?

20 MS. SANDY BAUERLEIN: That is correct.

21 MR. BOB PETERS: Can you tell the  
22 panel whether the \$53 million in restructuring costs  
23 includes any pension related costs?

24 MS. SANDY BAUERLEIN: No, it does not  
25 include any pension related costs. It is simply the

1 severance amounts and it's about 50 million for the --  
2 the payouts to the employees for thirty (30) weeks of  
3 severance pay.

4 MR. BOB PETERS: Of the eight hundred  
5 and seventeen (817) employees leaving the Corporation,  
6 is it Manitoba Hydro's understanding that a percentage  
7 of those will draw their pension earlier than has been  
8 actuarially planned?

9 MS. SANDY BAUERLEIN: Yes, that is --  
10 that there are -- will be some employees who are  
11 drawing their pension earlier than the actuarial  
12 assumptions would have indicated.

13 MR. BOB PETERS: Can you indicate to  
14 the Panel, what's the impact of that on Manitoba  
15 Hydro's financial position?

16 MS. SANDY BAUERLEIN: We are still  
17 working with our actuarial on some assumptions with  
18 respect to what our pension impact is in terms of the  
19 what we have now recorded as a liability, and what the  
20 potential impact to that liability is.

21 MR. BOB PETERS: How much of a  
22 liability are you forecasting?

23

24 (BRIEF PAUSE)

25

1 MS. SANDY BAUERLEIN: I can't recall  
2 the number off the top my head and I could check that.

3 MR. BOB PETERS: If you -- okay, I'd  
4 like you undertake to check the liability being  
5 forecast by Manitoba Hydro --

6 MS. SANDY BAUERLEIN: Or the pension  
7 liability.

8 MR. BOB PETERS: -- on account of  
9 pensions as a result of the eight hundred and  
10 seventeen (817) people that are --

11 MS. SANDY BAUERLEIN: We would be able  
12 to provide the Board what the current liability is.  
13 Again, we are working with our actuarial as part of  
14 this assessment. We have a December 31st assessment.  
15 We're actually in the process of -- of RFPing for our  
16 actuarial and what that impact will be on the  
17 liability for the March 31st, 2018 year end.

18 MR. BOB PETERS: In that answer, Ms.  
19 Bauerlein, are you telling the Panel that you don't  
20 know what, if any, impact there will be as a result of  
21 the voluntary departure program on the pension  
22 liability?

23 MS. SANDY BAUERLEIN: We are still  
24 assessing what that impact is what the actuarial's  
25 assistance.

1                   MR. BOB PETERS:    You haven't forecast  
2 an amount or estimated an amount?

3                   MS. SANDY BAUERLEIN:    No, we haven't  
4 at this time.

5                   MR. BOB PETERS:    And how -- Ms.  
6 Bauerlein, the pension liability that you spoke of,  
7 does not then reflect the -- additional liability that  
8 may come from the voluntary departure program?

9                   MS. SANDY BAUERLEIN:    It does not  
10 reflect the impact on the overall liability either in  
11 the -- the liability to Manitoba Hydro as a result of  
12 the eight hundred (800) and some odd people leaving  
13 the Company.

14                   For example, some employees may decide  
15 to take out their commuted value out of the pension  
16 whereas some employees may decide they want to draw  
17 down their pension. So there's a lot of factors and  
18 analysis that goes in to assessing what the impact on  
19 our liability account will be.

20                   MR. BOB PETERS:    So the earliest that  
21 this Board would see that liability would be in the  
22 year-end financial statements on March 31 of 2018?

23                   MS. SANDY BAUERLEIN:    That is correct.

24                   BOARD MEMBER GRANT:    Could I ask about  
25 -- I'm assuming -- sorry. To be eligible for the

1 voluntary program, did you have to be eligible for the  
2 pension plan? Did you have to meet -- have the  
3 current eligibility requirements?

4 MS. SANDY BAUERLEIN: No, there were  
5 some employees who chose just to leave the Company so  
6 they would not be eligible to retire. The majority of  
7 the employees that chose were eligible to retire but  
8 there were some who were not who just, for whatever  
9 reasons, felt that they didn't want to continue their  
10 employment with Manitoba Hydro.

11 BOARD MEMBER GRANT: And these would  
12 be in the defined benefit retirement programs?

13 MS. SANDY BAUERLEIN: Yes, we have a  
14 refined benefit pension plan.

15 BOARD MEMBER GRANT: So -- so -- but  
16 there could be quite a number that would be leaving  
17 well before the actuarial forecast would have them  
18 leaving?

19 MS. SANDY BAUERLEIN: There are some  
20 that are leaving before -- when the actuary would have  
21 assumed.

22 BOARD MEMBER GRANT: Okay. And -- and  
23 if it did cause a significant increase in the pension  
24 liability, at what point would that come back into  
25 your -- the current expenses or expenditures? Would

1 you --

2 MS. SANDY BAUERLEIN: So we adjust the  
3 liability for a number of factors, including impact on  
4 the discount rate, et cetera. That will be reflected  
5 in the year-end financial statement with potentially  
6 some adjustment to our pension expense, which is in  
7 our O&A cost adjusting for the change in the  
8 liability.

9 BOARD MEMBER GRANT: Okay, thank you.

10 MR. BOB PETERS: Mr. Chair, last  
11 week, Board counsel also sent some questions to Ms.  
12 Ramage in an effort to, I thought, expedite the  
13 demand-side management to -- and not having to have  
14 Ms. Morrison come back. Apparently some of the  
15 questions that were asked weren't going to be for only  
16 Ms. Morrison and so while this Panel is here, Mr.  
17 Miles on page 79 of Board counsels' volume 4 of book  
18 of documents is a -- is a response to an Information  
19 Request.

20 And marginal costs number that flows  
21 out of the bottom, you'll see one (1) number left on  
22 this page, is 77.73 cents; correct?

23 MR. TERRY MILES: I see that, yes.

24 MR. BOB PETERS: And that was dollars  
25 per kilowatt per year?

1 MR. TERRY MILES: Dollars per megawatt  
2 hour.

3 MR. BOB PETERS: Yes. And is it  
4 correct that Manitoba Hydro wanted to update this  
5 information?

6 MR. TERRY MILES: That's correct, yes.

7 MR. BOB PETERS: Is that something you  
8 can advise the Panel as to when that would be updated?

9 MR. TERRY MILES: Well, I'll say we  
10 are very, very close to having it updated and will  
11 submit it under an undertaking when it is completed.

12 MR. BOB PETERS: I'm mindful that the  
13 undertaking that to Ms. Bauerlein was offering with  
14 respect to pension liability is not required because  
15 that would be something in the last annual report, in  
16 any event.

17 MS. SANDY BAUERLEIN: Correct. One  
18 (1) thing I should clarify, especially for Dr. Grant,  
19 is that as the majority of people are leaving February  
20 1st, many of them will still -- or some of them are  
21 opting to take that thirty (30) weeks as leave. So,  
22 therefore, they may not be collecting pension until  
23 sometime in 2018/'19.

24 So we actually expect the bigger hit to  
25 be on our liability for the '18/'19 fiscal year rather

1 than the '17/'18 fiscal year.

2 MR. TERRY MILES: Mr. Peters, just for  
3 clarification. It's Terry Miles. The -- our plan  
4 would be to update this IR as part of the filing and  
5 it's PUB 2-57. So we would file an updated  
6 Information Request for that IR. Is that acceptable?

7 MR. BOB PETERS: Yes, that would be  
8 find and you say that that will be relatively shortly?

9 MR. TERRY MILES: I -- I anticipate  
10 that, yes. If there's any change from that we'll --  
11 we'll advise the Board.

12 MR. BOB PETERS: All right, so there's  
13 no undertaking needed on that in terms of the  
14 transcript. We'll just await for Manitoba Hydro to  
15 revise that information.

16 Now, Ms. -- Ms. Bauerlein, when it came  
17 to the DSM deferral account there happens to be  
18 sitting approximately \$43.6 million in that account  
19 currently; is that your understanding?

20 MS. SANDY BAUERLEIN: Actually the  
21 current balance is 48.8. The 43.6 was based on some  
22 assumptions as where we thought the 2016/'17 year was  
23 going to be -- or to come in at in the MFR and it was  
24 subsequently updated in IR Coalition-MH-1-139A.

25 MR. BOB PETERS: And so can you

1 explain to the Panel what Manitoba Hydro is proposing  
2 to happen with this deferral account balance?

3 MS. SANDY BAUERLEIN: Right now we're  
4 not really sure what will happen to this deferral  
5 account balance until Efficiency Manitoba is fully  
6 established and it delivers on whatever its plan will  
7 be. It is uncertain as to what the impacts will be on  
8 our load and, therefore, what actions might be  
9 necessary to clear the balances in these accounts at  
10 this time.

11 MR. BOB PETERS: In that answer, Ms.  
12 Bauerlein, are you suggesting that Manitoba Hydro is -  
13 - is envisioning having to transfer this over to  
14 Efficiency Manitoba, this 80 -- this \$48.8 million?

15 MS. SANDY BAUERLEIN: Efficiency  
16 Manitoba would be unable to actually transfer the  
17 amount over as they are not a regulated -- or I don't  
18 envision they're going to be a regulated organization.  
19 So these balances will stay -- there's actually a  
20 regulatory deferral asset and a regulatory deferral  
21 liability equal to the same amount.

22 Those balances will stay until we sort  
23 of understand the full impacts of Energy Efficiency  
24 Manitoba and how it will integrate -- the financial  
25 part will integrate with Manitoba Hydro.

1                   MR. BOB PETERS:    Has this DSM deferral  
2 account, Ms. Bauerlein, impacted Manitoba Hydro's net  
3 income?

4                   MS. SANDY BAUERLEIN:    No, it has not.  
5 What impacts net income is the actual DSM expenditures  
6 which we expense. We then -- because those costs are  
7 deemed to be amortized over a ten (10) year period for  
8 ratesetting purposes, we remove those costs in our net  
9 movement and add back in the amortization of the DSM  
10 expenditures. So, that's what hits net income.

11                   The difference -- the DSM deferral  
12 records what is actually spent versus what was  
13 projected to spend, and we -- we take that amount and  
14 we create a regulatory deferral asset and a regulatory  
15 deferral liability.

16                   MR. BOB PETERS:    Does Manitoba Hydro  
17 intend then to continue to amortize this deferral  
18 account balance through the net movement and  
19 regulatory accounts?

20                   MS. SANDY BAUERLEIN:    We are not  
21 amortizing at all the DSM deferral balance. What we  
22 are amortizing is the actual DSM expenditures. Sorry  
23 if I was unclear on that.

24

25                   (BRIEF PAUSE)

1 MR. BOB PETERS: Manitoba Hydro is  
2 amortizing the accumulation of all of the DSM  
3 expenditures that it makes over a ten (10) year  
4 period, correct?

5 MS. SANDY BAUERLEIN: Correct. The  
6 actual demand-side management expenditures are  
7 amortized over a ten (10) year period. They're  
8 brought in to -- to as an expense into our -- our  
9 statement of income over a ten (10) year period.

10 MR. BOB PETERS: And is it Manitoba  
11 Hydro's intentions to continue that -- to amortize  
12 those cumulative expenses?

13 MS. SANDY BAUERLEIN: Yes, it is.

14 MR. BOB PETERS: Mr. Cormie, let's  
15 turn to some more export revenue issues if we could.  
16 In volume 4 on page 168 we have a busy looking graph  
17 and what Manitoba Hydro is attempting to show the  
18 Board on page 168, Mr. Cormie, is what has happened to  
19 net export revenue forecast compared to Manitoba  
20 Hydro's 2015 forecast, correct?

21 MS. LIZ CARRIERE: I'll try and help  
22 you out, Mr. Peters. Yes, that's what it's attempting  
23 to do.

24 MR. BOB PETERS: All right. And there  
25 are three (3) variables at play in this -- in this

1 graph and one (1) of them is the US exchange rate;  
2 correct?

3 MS. LIZ CARRIERE: That's correct.  
4 There's -- the green line represents the change from  
5 the previous forecast due to the exchange mainly.

6 MR. BOB PETERS: And the inverse  
7 relationship as the Canadian dollar weakens, we -- we  
8 see that Manitoba Hydro gains export revenue because  
9 of that factor?

10 MS. LIZ CARRIERE: That's correct.

11 MR. BOB PETERS: And compared to last  
12 time, it's fluctuating somewhere between 25 and \$50  
13 million a year additional revenue based on the  
14 exchange rate?

15 MS. LIZ CARRIERE: Yes. I should just  
16 point out for the Board, though, that those impacts  
17 are offset by a reciprocal relationship between -- we  
18 have coupon payments or interest payments that are  
19 also in US dollars, and they essentially -- and other  
20 -- other payments in US dollars, such as imports that  
21 offset that US exchange rate.

22 So overall, the impact on net income is  
23 relatively minor.

24 MR. BOB PETERS: I wasn't going to the  
25 net income line, but you've just reminded the Board

1 that Manitoba Hydro uses its -- the revenues that it  
2 receives in US funds to pay its US denominated debt  
3 under its exposure management program?

4 MS. LIZ CARRIERE: That's right.

5 MR. BOB PETERS: All right. Let's  
6 turn to the volume variable shown on this chart, and  
7 Manitoba Hydro is showing the Board that the volume of  
8 exports is falling on the redline at least until 2021;  
9 correct?

10 MS. LIZ CARRIERE: That's correct.

11 MR. BOB PETERS: Is that as a result  
12 of Keeyask being delayed?

13 MS. LIZ CARRIERE: Yes, that's  
14 correct.

15 MR. BOB PETERS: And when Keeyask is  
16 in service, then the volumes pick up again?

17 MS. LIZ CARRIERE: Yes.

18 MR. BOB PETERS: The price variable  
19 shown on this chart is telling the Board that as a  
20 result of Manitoba Hydro's export price forecast,  
21 export revenue is expected to be down somewhere  
22 showing 100 to 100 and -- to \$200 million a year?

23 MS. LIZ CARRIERE: That's right. I  
24 should just make one (1) clarification about the  
25 volume. In the early years, it's declining because

1 we're drawing down reservoirs be -- from the -- from  
2 the above-average level of water flows down to  
3 average.

4                   The other thing that's impacting volume  
5 that you can see in the longer term is because we have  
6 lower load. We have a little bit more in surplus  
7 sales as well available for exporting.

8                   MR. BOB PETERS:    The result of those  
9 three (3) variables shows the Board shaded in the grey  
10 what the variation is from the last time the load fore  
11 -- the export forecast was before them?

12                   MS. LIZ CARRIERE:    Yes, that's --  
13 represents the total change from MH15.

14                   MR. BOB PETERS:    And -- and I recall  
15 in the materials -- tell me if I'm correct, that the -  
16 - the sum total of that shaded grey area is  
17 approximately an \$800 million reduction over that  
18 forecast period?

19                   MS. LIZ CARRIERE:    That's correct.

20                   MR. BOB PETERS:    We see on page 169 of  
21 Board counsels' book of documents the average forecast  
22 unit revenues compared to what Manitoba Hydro actually  
23 received, and I just want to make sure that the panel  
24 is understanding what Manitoba Hydro is showing here,  
25 that the solid black line depicts where Manitoba

1 Hydro's average unit revenues are from its exports?

2 MS. LIZ CARRIERE: That's correct.

3 MR. BOB PETERS: And the average unit  
4 revenues include the firm fixed price contracts as  
5 well as the opportunity sales that Manitoba Hydro  
6 makes into the market?

7 MS. LIZ CARRIERE: That's correct.

8 MR. BOB PETERS: And would it be  
9 correct that to the extent that the water flows have  
10 been above average and were -- and Manitoba Hydro was  
11 making more opportunity sales, those opportunity sales  
12 are at lower prices than what Manitoba Hydro would be  
13 getting under fixed price contracts?

14 MS. LIZ CARRIERE: Yes, generally.

15 MR. BOB PETERS: And so generally, the  
16 average unit price is being suppressed or brought down  
17 by the heavy weighting of the opportunity sales that  
18 are going on?

19 MS. LIZ CARRIERE: That's correct.

20 MR. BOB PETERS: And the Board sees in  
21 this that -- and I think Mr. Cormie had maybe a  
22 cleaned-up version in his materials, but this started  
23 back in IFF, Integrated Financial Forecast 08 with --  
24 I believe that's a red dotted line, and that was  
25 Manitoba Hydro's then expected trajectory for the

1 export revenue prices that it would receive on  
2 average?

3 MS. LIZ CARRIERE: Yes, that's right.

4 MR. BOB PETERS: And progressively, we  
5 can march through -- and we won't -- the different  
6 dotted lines, but it brings us up to the -- I'll call  
7 it the purple dashed line, where Manitoba Hydro is  
8 showing the Board that going forward, the forecast is  
9 not as -- as lucrative as it was previously?

10 MS. LIZ CARRIERE: Yes, that's right.

11 MR. BOB PETERS: And that's the 7.9  
12 percent number shown on the right of the chart that  
13 ties to the -- the one that's in Manitoba Hydro's  
14 Integrated Financial Forecast 16?

15 MS. LIZ CARRIERE: That's correct.

16 MR. BOB PETERS: Can you explain to  
17 the panel what the -- the Integrated Financial  
18 Forecast 16 low and the Integrated Financial Forecast  
19 16 update are to reflect?

20 MS. LIZ CARRIERE: So the IFF16  
21 reference forecast was based on -- it was an  
22 adjustment to the original 2016 forecast made in  
23 January. The low was this -- the low forecast at  
24 approximately the same time.

25 And then the IFF16 update, that was the

1 MH16 update that was submitted in -- I believe it was  
2 July, which actually represents a 2017 forecast of --  
3 of average unit revenues. All told, between the IFF16  
4 and IFF16 update, we saw approximately a 20 percent  
5 reduction in prices on average.

6 MR. BOB PETERS: And on page 168, I --  
7 I'd like to just go back and make sure that the panel  
8 has the latest information in light of what you're  
9 providing us, Ms. Carriere, that I believe I suggested  
10 to you and you agree that that grey shaded area  
11 represented an approximate \$800 million negative  
12 development in terms of the export forecast going  
13 forward?

14 MS. LIZ CARRIERE: That's correct.

15 MR. BOB PETERS: If you -- we take  
16 that -- that \$800 million. You've reminded me that  
17 Manitoba Hydro provided an update to its materials in  
18 the Integrated Financial Forecast 16 update. Do you  
19 recall?

20 MS. LIZ CARRIERE: Yes, that's right.

21 MR. BOB PETERS: And there was  
22 additional negative reduc -- a negative adjustment to  
23 the export forecast through that update?

24 MS. LIZ CARRIERE: Yes.

25 MR. BOB PETERS: And that was an

1 additional \$310 million over the ten (10) years?

2 MS. LIZ CARRIERE: Subject to check,  
3 yes.

4 MR. BOB PETERS: Thank you. And when  
5 we look at the price line on page 168 of Board  
6 counsels' book of documents, we see that it is -- it  
7 has decreased relative to the previous forecast that  
8 Manitoba Hydro shared with the Board last yea -- or  
9 two (2) years ago, correct?

10 MS. LIZ CARRIERE: Can you repeat that  
11 please?

12 MR. BOB PETERS: Yes, and it might  
13 even be for Mr. Cormie. The price forecast that we  
14 see depicted on page 168, which is on the monitors,  
15 has declined relative to what the Board had presented  
16 last time to -- to it from Manitoba Hydro?

17 MS. LIZ CARRIERE: Relative to MH15,  
18 we're -- the -- we're seeing a reduction, yes,  
19 attributable to prices.

20 MR. BOB PETERS: And again, Mr. Chair  
21 and panel members, I'm -- I'm mindful that I'm not  
22 looking for anything that is considered by the  
23 Corporation to be confidential.

24 But Manitoba Hydro has made two (2)  
25 changes to their forecast assumptions that -- that is

1 contained in their Integrated Financial Forecast 16.

2 Is that correct?

3 MS. LIZ CARRIERE: Yes, that's  
4 correct.

5 MR. BOB PETERS: And one (1) of them  
6 had to do with capacity value, and one (1) had to do  
7 with a -- a premium for being dependable?

8 MS. LIZ CARRIERE: That's correct.

9 MR. BOB PETERS: Can you explain to  
10 the panel why Manitoba Hydro had -- has made those --  
11 those assumption changes?

12 MS. LIZ CARRIERE: Well, I'll start  
13 with the premium. That had been included in previous  
14 forecasts, and it was based on analysis that Manitoba  
15 Hydro had done looking at the -- the export prices  
16 that were achieved in -- in contracted sales relative  
17 to the market forecast at that time. And that premium  
18 was included in previous forecasts to -- to recognize  
19 the additional value we were getting in contracted  
20 sales relative to the market forecast.

21 We haven't signed any sales in recent -  
22 - recent years, and so we can no longer substantiate  
23 putting that premium into our forecast. We can't  
24 anticipate what we're going to achieve relative to the  
25 market forecast.

1                   MR. BOB PETERS:    And on that note, Ms.  
2   Carriere, before the morning recess, Mr. Cormie and  
3   Mr. Miles were explaining to the Board the adjustments  
4   that were made on their planning assumptions and the  
5   Power Resource Plan.

6                   And we drew to the Board's attention  
7   the surplus energy that was at the -- at the very  
8   bottom of the chart.  Do you recall that?

9                   MS. LIZ CARRIERE:    Yes.

10                  MR. BOB PETERS:    And what is at the  
11   bottom -- I suppose we can go back to page 102  
12   briefly, if we could, in the fourth volume of Board  
13   counsels' book of documents.

14                  The bottom of the chart will depict the  
15   system surplus.  And this is system surplus that is  
16   dependable energy.  Would that be correct?

17                  MS. LIZ CARRIERE:    That's correct.

18                  MR. BOB PETERS:    And so in previous  
19   forecasts, Manitoba Hydro would be ascribing some  
20   premium to this energy in its financial -- in its  
21   forecast, in it's Integrated Financial Forecast?

22                  MS. LIZ CARRIERE:    That's right.  
23   These are -- these would be sales -- potential sales  
24   that we could make from dependable energy, and  
25   previously, we would have assumed a premium on that --

1 on sale of that energy.

2 MR. BOB PETERS: And you're telling  
3 the Board that Manitoba Hydro can no longer assume  
4 that it's going to achieve a premium on this energy?

5 MS. LIZ CARRIERE: That's right.  
6 There's not enough certainty.

7

8 (BRIEF PAUSE)

9

10 MR. BOB PETERS: Are you able to tell  
11 the Board generally when the last time Manitoba Hydro  
12 was able to achieve a premium on this dependable  
13 surplus energy?

14

15 (BRIEF PAUSE)

16

17 MR. DAVID CORMIE: Mr. Peters, I -- I  
18 don't think we can -- we can tell you -- I can give  
19 you that answer without referring to a specific  
20 contract, but what I can tell you is that since we  
21 signed the last contracts in the United States  
22 utilities are able to purchase renewable energy  
23 equivalent to that -- what Manitoba Hydro would  
24 provide, and it's being subsidized.

25 And so they have -- they -- they no

1 longer have -- they no longer see that Manitoba Hydro  
2 has an advantage with regard to emission reductions or  
3 cost that they would previously be able to acquire for  
4 Manitoba Hydro. We have -- we now have competitors  
5 because of the subsidy who can provide the same  
6 product at a lesser -- at a lesser price. And so  
7 we've lost -- we've lost that market niche that we --  
8 that we previously had.

9                   When -- or utilities are purchasing  
10 subsidized wind now at a discount, and that provides  
11 them a long-term hedge for the length of the wind farm  
12 at -- at a fixed price. And so, you know, Manitoba  
13 Hydro's ability to provide fixed-price power for ten  
14 (10) or fifteen (15) or twenty (20) years is no longer  
15 an advantage. And those -- with those two (2) factors  
16 we've -- we no longer can ask for a premium for a  
17 product because they have alternatives.

18                   MR. BOB PETERS: Does that answer --  
19 and thank you, Mr. Cormie, relate to only subsidized  
20 renewables that are available in the United States?

21

22   (BRIEF PAUSE)

23

24                   MR. DAVID CORMIE: The Canadian market  
25 is not -- is not subsidized. However, the Canadian

1 market does not have renewable targets that utilities  
2 are trying to achieve. Therefore, the Canadian market  
3 is not prepared to pay a premium as well.

4 MR. BOB PETERS: Can you explain to  
5 the panel what has happened, Mr. Cormie, with respect  
6 to the capacity value that Manitoba Hydro would --  
7 would want to obtain for it -- from -- for its energy  
8 and its capacity? What's changed since 2015?

9 MR. DAVID CORMIE: And -- and what has  
10 changed is that Manitoba Hydro has taken out the  
11 capacity revenue from the forecast that we had  
12 previously assumed that we would be able to include in  
13 our revenue forecast. That is -- has been a -- has  
14 been a policy decision based on the fact that we do  
15 not have signed term sheets in place for that -- those  
16 capacity sales. And although we are having  
17 discussions, we are not in a position to say with  
18 confidence that that capacity revenue will show up.

19 And we've judged that the risk to  
20 customers and -- is -- is higher to count on that  
21 revenue in the forecast as opposed to putting the  
22 revenue in the forecast at some future time in -- at -  
23 - at some -- at -- at a future time when those term  
24 sheets are signed and we can start counting on it.  
25 Then I think that's the reason we've taken it out.

1                   MR. BOB PETERS:    So on page 98 of  
2 Board counsels' book of documents, you and Mr. Miles  
3 reviewed with the Board the -- the capacity side. The  
4 bottom line in terms of system surplus of capacity,  
5 we'll see at the very bottom of the page the -- this  
6 is dependable supply surplus, Mr. Cormie?

7                   MR. DAVID CORMIE:    Yes. And there's  
8 two (2) issues with this table, Mr. Peters, is  
9 generally we're limited by our summer capacity  
10 surplus, not our winter capacity surplus. So if we're  
11 looking at the capacity revenues it's -- would be  
12 better to look at the summer table.

13                  MR. BOB PETERS:    So then --

14                  MR. DAVID CORMIE:    If you have that  
15 exhibit handy.

16                  MR. BOB PETERS:    Let's turn to page  
17 100 and 101. Let me -- let me just understand then --  
18 and I thank you for -- for guiding me there, Mr.  
19 Cormie. What you're telling the Board is that a lot  
20 of Manitoba Hydro's capacity is needed in the winter,  
21 so your greatest surplus is in the summer.

22                  MR. DAVID CORMIE:    That's true. But  
23 what -- what is more important is that US utilities,  
24 they're peak demand's in the summer, so that's where  
25 the market is. So having an extra --

1                   MR. BOB PETERS:     Inverse to Manitoba  
2 Hydro because they need it presumably for things like  
3 air conditioning load?

4                   MR. DAVID CORMIE:     Having extra  
5 capacity in the winter doesn't help them.  It's our  
6 ability to supply capacity in the summer that -- so it  
7 -- this is why this table is more -- is more  
8 appropriate.

9                   MR. BOB PETERS:     And we see on the  
10 bottom line, in terms of system surplus, that Manitoba  
11 Hydro does have considerable summer capacity surplus;  
12 correct?

13                   MR. DAVID CORMIE:     Yes.

14                   MR. BOB PETERS:     In previous export  
15 price forecasts Manitoba Hydro was making an  
16 assumption that this surplus capacity would have an  
17 adjustment to it and to increase the -- the forecast  
18 because the capacity had, Manitoba Hydro assumed, some  
19 value?

20                   MR. DAVID CORMIE:     Up to our ability  
21 to support it with firm transmission in this -- into  
22 the market.  So, you know, this table shows 1,700  
23 megawatts or 1,694 megawatts.  I'm not sure what year  
24 that is on the bottom line.  We would need to have  
25 1,694 megawatts of firm transmission be able to sell

1 that capacity.

2 MR. BOB PETERS: All right. And you  
3 were going to explain to the panel what has happened  
4 since 2015 to lead Manitoba Hydro to conclude that  
5 that capacity adder wouldn't be available.

6 MR. DAVID CORMIE: Well, I -- I think  
7 the decision to remove the capacity revenue is a  
8 policy decision, and maybe Mr. McCallum could speak to  
9 that.

10 MR. JAMES MCCALLUM: Sure. I'll --  
11 I'll maybe add a couple of points here. In this  
12 forecast we've elected to take out capacity values for  
13 contracts we don't have. So past forecasts would have  
14 assumed we are able to find a counterparty and agree  
15 to a dependable contract at an assumed price where we  
16 would receive this -- this capacity value.

17 For this forecast we've taken that out.  
18 The point of view being that while Mr. Cormie  
19 continues to work very hard with his team trying to  
20 find additional counterparties, this is not easy and  
21 can't be counted on. And back to some comments we  
22 made last week around the importance of what we put  
23 into a financial forecast or financial model, we can't  
24 kind of continue a pattern of assuming too many good  
25 things happen.

1           I think I would also just point out,  
2 and Mr. Cormie can speak better than I to the market  
3 dynamics, but really the -- our practical ability to  
4 enter into new capacity sales or new, dependable  
5 contract sales that would yield additional revenue in  
6 the next five (5), six (6), seven (7) years is pretty  
7 low.

8           Again, Mr. Cormie can speak more to  
9 this, but when a customer, as I understand it anyway,  
10 enters into a contract with us they are often doing it  
11 in lieu of -- of building their own capacity. And so  
12 if you -- if you're -- if you're running a major  
13 utility and you find yourself in need of -- of, you  
14 know, secure, firm, dependable power on anything, you  
15 know, shorter than five (5), six (6), seven (7) years  
16 in the future, you've probably done something wrong in  
17 your planning.

18           And so really we're talking about our  
19 ability to add contracts that generate revenue more  
20 towards the very tail end of this ten (10) year  
21 horizon we're focused on here. Makes really very  
22 limited difference in the next five (5) or six (6)  
23 years due to the practical inability to sell the  
24 power.

25           MR. DAVID CORMIE:   Mr. Peters, I just

1 wanted to add to Mr. McCallum's comment. We're --  
2 we're still faced with the uncertainty of the Keeyask  
3 in-service date. And so in the short term, you know,  
4 around '21/'22 and '22/'23, we would be reluctant to  
5 sell out the surplus that's shown on this table in  
6 those years. And -- and as Mr. McCallum suggested,  
7 the big jump in surplus capacity doesn't end until the  
8 NSP sales expire in 2025.

9           And -- and so, you know, the -- that's  
10 -- that's the large block of capacity that we are  
11 expecting to be able to take to market, but that --  
12 that won't have an effect on the revenue projections  
13 until 2025. So it's a long way away outside --  
14 essentially outside of the -- of the -- of where we're  
15 looking at the rate case today.

16           And then one (1) final point I wanted  
17 to make, and was reminded by my back row, that it's  
18 the lesser of the winter capacity or the summer  
19 capacity that determines the surplus and because the  
20 capacity market is an annual market and -- and we have  
21 to have it both winter and summer. So it's the summer  
22 demand, but it -- but that demand has to be supplied  
23 in the winter. So it's the minimum of the -- of the -  
24 - of those two (2) numbers shown on those two (2)  
25 tables that you took me through.

1                   MR. BOB PETERS:    Is that requirement,  
2 Mr. Cormie, for the capacity to be an annual market,  
3 is that a new MISO requirement?

4                   MR. DAVID CORMIE:    No, it's not.  It's  
5 -- it's always been an -- an annual capacity market.

6                   MR. BOB PETERS:    And does Manitoba  
7 Hydro deal with that on its diversity exchange  
8 arrangements only on a seasonal basis?

9                   MR. DAVID CORMIE:    Well, we -- we can  
10 enter into the seasonal diversity contracts, but it's  
11 still an annual -- it's still an annual construct.

12                   MR. BOB PETERS:    Do you un -- do you  
13 know, Mr. Cormie, if the MISO market is changing the  
14 annual requirement for the capacity market?

15                   MR. DAVID CORMIE:    Yes, we've been  
16 active for several years trying to have the MISO  
17 capacity market become a seasonal market.  As of today  
18 we haven't made progress there and it looks like  
19 that's less of a priority to the -- to the MISO  
20 market.  And -- and it's going -- for our planning  
21 purposes it's going to remain as an annual for the  
22 near term.

23                   MR. BOB PETERS:    If we could turn to  
24 page 182 of Board counsels' fourth book of documents,  
25 Exhibit 42-4.  There's a list, Mr. Cormie, of

1 contracts, and I think most of them have your  
2 fingerprints on them. You raised the topic before,  
3 but let me -- let me add to it. Absent from this list  
4 is the 308 megawatt sale to Wisconsin Public Service;  
5 correct?

6 MR. DAVID CORMIE: Yes.

7 MR. BOB PETERS: Can you explain why  
8 that is no longer on Manitoba Hydro's list?

9 MR. DAVID CORMIE: One (1) of the  
10 conditions precedent in that agreement with Wisconsin  
11 Public Service was Manitoba Hydro had the right to  
12 terminate the contract if we chose not to proceed with  
13 Conawapa. We've chosen not to proceed with Conawapa.  
14 Therefore, the contract is -- has -- has no effect  
15 anymore and we've removed it from our plans.

16 MR. BOB PETERS: Was that condition  
17 precedent that you talk about, that legal concept, was  
18 that for Manitoba Hydro's benefit, or was it for  
19 Wisconsin Public Service's benefit?

20 MR. DAVID CORMIE: That was for our  
21 benefit.

22 MR. BOB PETERS: So Manitoba Hydro had  
23 the choice whether to remove that contract from its  
24 list or not?

25 MR. DAVID CORMIE: We did, but

1 Wisconsin Public Service also had similar protection  
2 where they would require regulatory approval for the  
3 contract. And that's become a moot point because we  
4 are -- we've told Wisconsin Public Service we're not  
5 building the project and therefore the contract is of  
6 no consequence anymore.

7 MR. BOB PETERS: Okay. Could Manitoba  
8 Hydro have served that contract without Conawapa?

9 MR. DAVID CORMIE: No. That contract  
10 was tied to a commitment to build Conawapa.

11 MR. BOB PETERS: Okay. I'll -- I'll  
12 rephrase my question.

13 Could Manitoba Hydro have served that  
14 Wisconsin Public Service contract from the energy  
15 that's available on its system excluding what Conawapa  
16 would provide?

17 MR. DAVID CORMIE: For that to happen,  
18 Mr. Peters, Manitoba Hydro would have to renegotiate  
19 the contract. And I believe we would probably have  
20 the resources from Keeyask in order to do that. But  
21 more importantly is whether Wisconsin Public Service  
22 would be interested in -- in that it's not -- it's  
23 more of their willingness to renegotiate given the  
24 passage of time.

25 MR. BOB PETERS: And does Manitoba

1 Hydro have the transmission rights that would be  
2 necessary to serve that arrangement under the new  
3 Great Northern transmission line in the Manitoba  
4 Minnesota transmission plan project?

5

6 (BRIEF PAUSE)

7

8 MR. DAVID CORMIE: I'm reminded, Mr.  
9 Peters, that we're going into the details of contracts  
10 that we prefer not to talk about.

11 MR. BOB PETERS: All right. I -- I  
12 have your point. The last point on that contract is  
13 you -- you're telling this panel that as a result of  
14 actions by Manitoba Hydro there's no longer the  
15 negotiated arrangement in place and that if anything  
16 further was to be done it would require a new  
17 negotiation and a new contract?

18 MR. DAVID CORMIE: I -- I think what I  
19 can say, Mr. Peters, is we've removed that contract  
20 from our list of obligations and we're not planning to  
21 serve it. But to go into more of the details is --  
22 it's -- it's getting into that grey area.

23 MR. BOB PETERS: All right. Let's  
24 stay away from that if we can, Mr. Cormie. But on  
25 that same list on page 182, is Manitoba Hydro still

1 able to serve all of these contracts, even with the  
2 delay in Keeyask that Manitoba Hydro has planned, the  
3 twenty-one (21) month delay?

4 MR. DAVID CORMIE: Yes, Manitoba Hydro  
5 has sufficient resources to meet all our obligations.

6 MR. BOB PETERS: Does that take into  
7 account that answer, Mr. Cormie, that if any of these  
8 arrangements required specific environmental  
9 attributes Manitoba Hydro would still have those  
10 available from its existing resources?

11 MR. DAVID CORMIE: Yes, Mr. Peters.  
12 As I said, we can meet all our obligations under our  
13 contracts.

14 MR. BOB PETERS: If Keeyask is delayed  
15 thirty-two (32) months can Manitoba Hydro still serve  
16 all of these contracts listed on page 182 that's on  
17 the monitor?

18

19 (BRIEF PAUSE)

20

21 MR. DAVID CORMIE: Subject to check,  
22 Mr. Peters, I believe we do. We also have the ability  
23 to acquire resources in the short term if that became  
24 necessary. We -- we can enter the market, and if it  
25 was necessary, acquire resources if -- if there were a

1 delay of thirty-two (32) months for an additional  
2 delay.

3 MR. BOB PETERS: One (1) of the larger  
4 contracts that begins in 2020, Mr. Cormie, is the  
5 Minnesota Power 250 megawatts sale?

6 MR. DAVID CORMIE: Yes.

7 MR. BOB PETERS: And would the Board  
8 be correct in understanding that the Manitoba  
9 Minnesota transmission line project may be delayed?

10 MR. DAVID CORMIE: Is there a  
11 question, Mr. Peters?

12 MR. BOB PETERS: Will the -- well, let  
13 me just under -- let me ask it this way. There was  
14 reports that Manitoba Hydro would have to embark on a  
15 different process to get approvals, regulatory  
16 approvals, for the Manitoba Minnesota transmission  
17 line project.

18 Is that correct?

19 MR. DAVID CORMIE: We've been advised  
20 by the National Energy Board that we require a  
21 certificate process for the approval of the Minnesota  
22 Manitoba transmission project. I've been advised by  
23 our transmission business unit that in spite of that  
24 certificate process that we will still achieve the  
25 targeted June 1st, 2020, in-service date. And there

1 is sufficient flexibility in the schedule to achieve  
2 the contracted in-service date.

3 MR. BOB PETERS: All right. Thank you  
4 for that, sir.

5

6 (BRIEF PAUSE)

7

8 MR. BOB PETERS: Mr. Chair, the last  
9 topic I had questions on is a matter that I know is  
10 also going to be canvassed by my friends opposite. So  
11 I'm proposing that if it suits the panel, we could  
12 take the lunch recess, the lunch break, and I will  
13 discuss with them who will be asking questions about  
14 the business operations capital of the Corporation.  
15 And it may be that the we can streamline it through  
16 those discussions. So if that suits the panel that's  
17 what we would do.

18 THE CHAIRPERSON: Ms. Ramage...?

19 MS. PATTI RAMAGE: I have no comment  
20 on that. I wanted to jump in and just -- Ms.  
21 Bauerlein had a clarification she wanted to make of  
22 one (1) of her answers. And so before we moved on to  
23 the topic --

24 THE CHAIRPERSON: Okay.

25 MS. PATTI RAMAGE: -- or moved to the

1 lunch break.

2 THE CHAIRPERSON: Certainly. Ms.  
3 Bauerlein?

4 MS. SANDY BAUERLEIN: Thank you. I  
5 just wanted to clarify, when we were discussing the  
6 operating administrative targets, while the target did  
7 assume a reduction of five hundred (500), it was five  
8 hundred (500) operational people. The eight hundred  
9 and twenty-one (821) that have left the company, a  
10 portion of those people will also work on our capital  
11 construction.

12 So many of our employees one (1) day  
13 may be working on a maintenance project and they  
14 timecard to that, so they would be in our operating  
15 administrative costs. And the next day they would be  
16 working on a capital construction project, so would --  
17 those costs, that time that they're spending, their  
18 salary associated with when they're spending time on  
19 capital is not part of the O and A costs. So that  
20 eight hundred and twenty-one (821) is not all  
21 operational. It -- a portion of it is -- is the  
22 construction as well.

23 THE CHAIRPERSON: Mr. Peters, any  
24 follow-up from that?

25 MR. BOB PETERS: No. I thank Ms.

1 Bauerlein for the clarification.

2 THE CHAIRPERSON: Thank you. We will  
3 adjourn for one hour. Thank you.

4

5 --- Upon recessing at 12:01 p.m.

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

7

8 THE CHAIRPERSON: Thank you, Mr.  
9 Peters...?

10

11 CONTINUED BY MR. BOB PETERS:

12 MR. BOB PETERS: Thank you. Good  
13 afternoon, Mr. Chair, Board members, Manitoba Hydro's  
14 updated witness panel and certainly to Ms. Van  
15 Iderstine.

16 Welcome. I would like to start the  
17 afternoon with just putting the context out by looking  
18 at the page 525 of Board counsels' fourth book of  
19 documents, which is on the screen in front of us. It  
20 is part of Exhibit PUB-42-4. I'll be referring to  
21 that volume in my questioning.

22 And, Mr. Wortley, it would be correct  
23 to say that Manitoba Hydro's in the midst of its  
24 largest capital expansion in the history of the  
25 Corporation?

1                   MR. JOEL WORTLEY:    Yeah, I think that  
2 would be fair to say.

3                   MR. BOB PETERS:    And would it also be  
4 correct if I could ask that one (1) of the Information  
5 Requests that My Friend Ms. Dilay had asked Coalition  
6 Manitoba Hydro first round 148.

7                   Mr. Wortley, as I understand what's on  
8 the screen in front of us happens to be the system  
9 average interruption frequency index chart of Manitoba  
10 Hydro versus all other Canadian electric utilities.

11                   Is that your understanding, sir?

12                   MR. JOEL WORTLEY:    Yes versus the CEA  
13 group of utilities.

14                   MR. BOB PETERS:    And when you say CEA  
15 that's the Canadian Electrical Association, which is  
16 the umbrella group that represents the electric  
17 utilities in Canada?

18                   MR. JOEL WORTLEY:    That's correct.

19                   MR. BOB PETERS:    And is it your  
20 understanding that the Canadian Electrical Association  
21 gathers data from the Canadian electric utilities and  
22 then provides it to the utilities?

23                   MR. JOEL WORTLEY:    That is my  
24 understanding.

25                   MR. BOB PETERS:    And Manitoba Hydro

1 would have contributed to that data collection?

2 MR. JOEL WORTLEY: I believe so, yes.

3 MR. BOB PETERS: All right. And I'll  
4 try to stay away from the acronyms. I'm not sure how  
5 well I'll do. But what's in front of the panel is the  
6 depiction of the four (4) different quartiles in which  
7 the Canadian utilities find themselves in terms of  
8 their -- the frequency of interruption of their  
9 systems; is that correct?

10 MR. JOEL WORTLEY: Yes, it is.

11 MR. BOB PETERS: And just to orient  
12 ourselves to this chart, the blue at the bottom is the  
13 first quartile, meaning the best quartile; is that  
14 your understanding?

15 MR. JOEL WORTLEY: That is my  
16 understanding.

17 MR. BOB PETERS: And then we see the  
18 second is in red, third in green and the fourth in  
19 orange; correct?

20 MR. JOEL WORTLEY: Correct.

21 MR. BOB PETERS: And there's a black  
22 line that's plotted against these other -- this  
23 collection of quartiles and that black line represents  
24 Manitoba Hydro's actual experience as to where it  
25 falls relative to the four (4) quartiles that the

1 Canadian Electrical Association has provided?

2 Do you agree?

3 MR. JOEL WORTLEY: Yes, I would.

4 MR. BOB PETERS: And would it be  
5 correct, Mr. Wortley, to suggest that Manitoba Hydro  
6 finds itself in the first quartile of Canadian  
7 electrical utilities with respect to the frequency of  
8 interruptions?

9 MR. JOEL WORTLEY: Yes, with some  
10 variation.

11 MR. BOB PETERS: And when I say  
12 "frequency of interruptions," in the left side access  
13 that's calibrated in minutes per year, is it?

14 I stand corrected. Sorry, this is the  
15 frequency of interruption. So, this is the absolute  
16 number of interruptions that Manitoba Hydro's  
17 customers on average would experience in the  
18 respective years?

19 MR. JOEL WORTLEY: Yes, I believe  
20 that's on a per customer basis.

21 MR. BOB PETERS: Thank you. So what -  
22 - what the -- what it's telling the Panel is that, on  
23 average, Manitoba Hydro's customers are interrupted  
24 approximately once a year.

25 Would I be reading that correct, sir?

1 (BRIEF PAUSE)

2

3 MR. JOEL WORTLEY: Yes, that is  
4 correct.

5 MR. BOB PETERS: Thank you, Mr.  
6 Wortley, and if we turn to the next page of this  
7 Information Request, we have a new acronym and a new  
8 chart, but this is the system average interruption  
9 duration index, as I understand it, correct?

10 MR. JOEL WORTLEY: That's right.

11 MR. BOB PETERS: And it also comes  
12 from the Canadian Electrical Association from their  
13 surveys of all Canadian electric utilities including  
14 Manitoba Hydro's, sir?

15 MR. JOEL WORTLEY: I couldn't comment  
16 on exactly what the Canadian Electrical Association  
17 membership is, but that's the right idea.

18 MR. BOB PETERS: All right. And on  
19 this chart it's also divided into quartiles, sir,  
20 correct?

21 MR. JOEL WORTLEY: Correct.

22 MR. BOB PETERS: And Manitoba Hydro is  
23 plotted as the -- the black line, mostly in the first  
24 quartile?

25 MR. JOEL WORTLEY: With some

1 variation, yes.

2 MR. BOB PETERS: And this is the  
3 system average index interruption duration index. So  
4 this one on the left-hand margin -- the left-hand  
5 axis, is that calibrated in -- in minutes?

6 MR. JOEL WORTLEY: Yes, it is.

7 MR. BOB PETERS: And would I be  
8 correct, Mr. Wortley, in looking at this chart to say  
9 that Manitoba Hydro's average duration of interruption  
10 is somewhere around the -- can I say, one hundred  
11 (100) minutes per year?

12 MR. JOEL WORTLEY: That's right. The  
13 five-year average is a hundred and thirty-four (134)  
14 minutes.

15 MR. BOB PETERS: And so with the  
16 variations that you've noted, Mr. Wortley, Manitoba  
17 Hydro ranks generally in the first quartile on both  
18 the duration index and the frequency index?

19 MR. JOEL WORTLEY: Correct.

20 MR. BOB PETERS: And would it also be  
21 correct that Manitoba Hydro is investing billions of  
22 dollars to further improve the reliability of Manitoba  
23 Hydro's system?

24

25 (BRIEF PAUSE)

1                   MR. JOEL WORTLEY:    The business  
2 operations capital that Manitoba Hydro reinvests in  
3 its systems every year is currently targeted really at  
4 maintaining its existing service level, not improving  
5 it as a -- as suggested?

6                   MR. BOB PETERS:    Well, let me re-ask  
7 the question.  One (1) of the reasons Manitoba Hydro  
8 is investing in Bipole III is to improve the  
9 reliability of Manitoba Hydro's system?

10

11                                   (BRIEF PAUSE)

12

13                   MR. JOEL WORTLEY:    Yes, so my comment  
14 referred to the business operations capital.  The  
15 Bipole III project falls under our major new  
16 generation and transmission investment segment and is  
17 a little different in that what we're seeing on the  
18 chart here with system average interruption,  
19 frequency and duration is a distribution or a customer  
20 centric metric.

21                   Bipole III will re -- improve the bulk  
22 electric reliability of the system.  And so it won't  
23 have a direct impact on SAIDI or SAIFI but it will  
24 make the grid system as a whole more reliable.

25                   MR. BOB PETERS:    And if the grid

1 system as a whole is more reliable, that may be  
2 reflected in the -- you called it the SAIDI and the  
3 SAIFI, which are these interruption duration and  
4 frequency indexes that we refer to.

5 MR. JOEL WORTLEY: It -- it -- it's  
6 possible. It's -- it's a different level of  
7 interruption that we're talking about. SAIDI and SAIFI  
8 are in -- are affected by numerous small events. For  
9 the bulk electric system to have a interruption, for  
10 instance, a -- have a Bipole I, II failure due to a  
11 weather event and have -- the impacts would be much,  
12 much larger. So, you'd have a very large number of  
13 customers impacted whereas mostly when we're talking  
14 with SAIDI and SAIFI, they're relatively small events.

15 MR. BOB PETERS: But if the -- but if  
16 the Bipole III system was interrupted or -- sorry, let  
17 me rephrase the question.

18 If the Bipole system was interrupted,  
19 would that be reflected on these charts that you and I  
20 have just reviewed?

21 MR. JOEL WORTLEY: It could. Depends  
22 on the magnitude of the disruption. So for instance,  
23 when Bipole I and II went down some years ago,  
24 everything was done within Manitoba Hydro's power to  
25 not have the customer impacted and, for the most part,

1 the customer wasn't.

2                   And so, it really depends on how  
3 serious the event is. If it's large enough,  
4 certainly, there will be brownouts, blackouts,  
5 customers will be impacted but we'll do everything  
6 that we can to mitigate that impact.

7                   MR. BOB PETERS: If we turn to page  
8 591 of Board counsels' fourth book of documents.  
9 Again, Exhibit 42-4, there appears to be some  
10 information provided on page 591.

11                   Would it be correct, Mr. Wortley, that  
12 this chart would suggest to Manitoba Hydro that its  
13 customers are satisfied with the existing performance  
14 of Manitoba Hydro system?

15                   MR. JOEL WORTLEY: Yeah, I think  
16 that's a fair interpretation.

17                   MR. BOB PETERS: So not only does the  
18 Canadian Electrical Association guidelines put  
19 Manitoba Hydro near the top, but it's Manitoba Hydro's  
20 own customers also appear to echo that with their  
21 satisfaction of the reliability of Manitoba Hydro?

22                   Would you agree?

23                   MR. JOEL WORTLEY: I would agree.

24                   MR. BOB PETERS: If we go to page 592  
25 there's some information here with Manitoba Hydro's

1 customers and their satisfaction with Manitoba Hydro's  
2 rate increase plan; is that correct?

3

4 (BRIEF PAUSE)

5

6 MR. JOEL WORTLEY: Sorry, I don't see  
7 here where it says that the customers were asked about  
8 the rate increase plan.

9 MR. BOB PETERS: Okay. Do you  
10 understand it to be your customer satisfaction with  
11 the price of electricity that they -- they have in  
12 Manitoba?

13 MR. JOEL WORTLEY: That seems  
14 appropriate, yes.

15 MR. BOB PETERS: All right. Let's  
16 turn the page then to page 594 and as I understand  
17 what Manitoba Hydro has provided here is the result of  
18 a 2013 survey that was done on Manitoba Hydro's  
19 customers, Mr. Wortley.

20 Are you familiar with that?

21 MR. JOEL WORTLEY: I see it here, yes.

22 MR. BOB PETERS: And in this  
23 particular survey the question asked of the customers  
24 is: Do you think an increase of 4 percent in your  
25 electricity bill each year for the next five (5) to

1 ten (10) years to invest in these improvements is a  
2 good idea you'd support; something you don't like, but  
3 think is necessary; a bad idea that you oppose; and  
4 then if support is opposed, would that be strongly or  
5 somewhat?

6 MS. HELGA VAN IDERSTINE: Mr. Peters -  
7 - Peters, I'm just interrupting at the moment because  
8 I'm not sure this is the right panel to the directing  
9 that kind of question to. And Mr. Wortley can correct  
10 me if I'm wrong, but this wouldn't be the sort of  
11 information that he would have been privy to, and been  
12 part of preparing.

13 So, I'm not sure he's the right person  
14 to be asking this of.

15 MR. BOB PETERS: Well, I'll -- I'll  
16 try and if Mr. Wortley is unable to provide us that  
17 information then we'll -- we'll move it along then,  
18 Ms. Van Iderstine.

19

20 CONTINUED BY MR. BOB PETERS:

21 MR. BOB PETERS: But Mr. Wortley, in  
22 looking at this survey, it appears that 68 percent of  
23 Manitoba Hydro customers that were surveyed are  
24 opposed to the annual 4 percent rate increases to  
25 invest in improvements in the Hydro system.

1 Is that your understanding, sir?

2 MR. JOEL WORTLEY: That's what I see  
3 here, yes.

4 MR. BOB PETERS: And you were aware of  
5 that, were you, before this rate case started?

6 MR. JOEL WORTLEY: I was not  
7 personally aware, no.

8 MR. BOB PETERS: So these results, if  
9 you take it subject to check, came out of a 2013/'14  
10 customer survey.

11 Do you know if Manitoba Hydro has a  
12 more current survey than this one, sir?

13 MS VAN IDERSTINE: Sorry, I'm feeling  
14 at a bit of a disadvantage in terms of whether we take  
15 that subject to check because I'm not -- this is  
16 definitely not the panel to be asking that question of  
17 and so -- as we progress I'm -- if there's a more --

18 MR. BOB PETERS: How about if we take  
19 it, Ms. Van Iderstine, that unless Manitoba Hydro  
20 tells the panel otherwise, we'll take that this  
21 2013/'14 survey is the most current.

22 Would you be satisfied with that,  
23 ma'am?

24 MS. VAN IDERSTINE: Yes, I think that  
25 we would --

1 MR. BOB PETERS: Okay, thank you for  
2 that.

3 MS. VAN IDERSTINE: And if there's  
4 something more recent than we will produce it,  
5 presumably in response to this same question that was  
6 asked here as the under -- the IR reference.

7 MR. BOB PETERS: Thank you, ma'am,  
8 that'll be fine.

9

10 CONTINUED BY MR. BOB PETERS:

11 MR. BOB PETERS: So, Mr. Wortley, the  
12 rate increase proposal in this survey was 4 percent,  
13 according to the materials. Do you agree?

14 MR. JOEL WORTLEY: I do.

15 MR. BOB PETERS: And if the survey  
16 asked about an 8t percent increase in electricity  
17 bills, would you -- would Manitoba Hydro expect more  
18 than 68 percent of its customers would be opposed?

19 MR. JOEL WORTLEY: I can't comment on  
20 that.

21 MR. BOB PETERS: Mr. Wortley, has  
22 Manitoba Hydro factored customer opposition to rate  
23 increases into the business operations capital  
24 budgeting process?

25 MR. JOEL WORTLEY: The business

1 operations capital planning process involves striking  
2 the right balance between cost performance and risk  
3 for the customer. No one wants to pay more than they  
4 have to. I'm a customer too. I don't want to pay  
5 more than I have to but I also want my lights to be on  
6 and I want my furnace to run when -- when it's cold  
7 out.

8                   And so when we plan the business  
9 operations capital, it's with an eye towards keeping  
10 the system running safely and reliably for customers.  
11 And as much as we'd rather not have to pay when we --  
12 for things that are necessary, if they are necessary  
13 and they're going to impact the reliability of the  
14 system, then we plan them and proceed with those  
15 investments.

16                   So it's very much with an eye towards  
17 what's going to be the best for the customer and  
18 striking that balance between cost performance and  
19 risk that drive our planning processes.

20                   MR. BOB PETERS: All right, Mr.  
21 Wortley, are you telling the Panel that the business  
22 operations capital planning has resulted in the rate  
23 impacts being reduced from what they otherwise would  
24 have been because of the biz operations capital's view  
25 of customer acceptance?

1 MR. JOEL WORTLEY: Sorry, I'm not sure  
2 I understand your question.

3 MR. BOB PETERS: Fair enough. I'll  
4 rephrase it. Do I take from your last answer to the  
5 Panel that the budget and the planning for the  
6 business operations group is not impacted by customer  
7 comments?

8 MR. JOEL WORTLEY: The -- the  
9 objective of the planning is to do what's best for the  
10 customer. There is not a process today to gather  
11 comments directly from the customer for consideration  
12 in that planning.

13 MR. BOB PETERS: It's what Manitoba  
14 Hydro then will determine, using its judgment, what  
15 would be best for the customers; correct?

16 MR. JOEL WORTLEY: That's correct.

17 MR. BOB PETERS: All right, on page  
18 568 of Board counsels' fourth volume we have -- excuse  
19 me.

20 We have a comparison, Mr. Wortley, of  
21 Manitoba Hydro's capital expenditure 15 versus its  
22 capital expenditure 16, correct?

23 MR. JOEL WORTLEY: That's correct.

24 MR. BOB PETERS: And would this Panel  
25 be correct in -- in interpreting this information that

1 Manitoba Hydro actually increased the budgets for its  
2 transmission and its marketing customer service in  
3 CEF 16 relative to the capital expenditure forecast  
4 from 15?

5 MR. JOEL WORTLEY: Yes. As part of  
6 Manitoba Hydro's annual budgeting process for the  
7 business operations capital is a look at the three (3)  
8 portfolios to see you where we're sitting relative to  
9 what we feel our issues on our generation transmission  
10 and dissipation systems.

11 So in this case with -- with an  
12 objective of doing what's going to be best for the  
13 customer, some portfolio budgets were increased a  
14 little bit, others were decreased a little bit, and  
15 overall \$240 million were taken out of the budget over  
16 ten (10) years. So, in fact, costs were reduced in  
17 this year-over-year analysis.

18 MR. BOB PETERS: Just a point of  
19 clarification, when you mentioned distribution, that's  
20 the -- the old name for marketing and customer  
21 service?

22 MR. JOEL WORTLEY: That's correct.  
23 The -- t he group is called marketing and customer  
24 service, the system is the distribution system.

25 MR. BOB PETERS: All right and you say

1 that -- we see in the bottom right hand that there's  
2 \$240 million of lower spending on a ten (10) year  
3 total and that's what you drew the Board's attention  
4 to, sir?

5 MR. JOEL WORTLEY: That's correct.

6 MR. BOB PETERS: Can you confirm to  
7 the Board that at least \$140 million of that is  
8 related to something Mr. Miles told them before lunch  
9 today and that was that there was a decision made to  
10 stop the major rebuilding of Pointe du Bois due to low  
11 export prices?

12 MR. JOEL WORTLEY: Subject to check on  
13 the number, I would confirm that that led to some  
14 savings, yes.

15 MR. BOB PETERS: If we could go back  
16 to that Consumers Coalition Information Request and  
17 the -- and the graphs, Coalition Manitoba Hydro first  
18 round 148.

19 Mr. Wortley, we're looking at the  
20 duration index, correct, on -- on the screen?

21 MR. JOEL WORTLEY: That's correct.

22 MR. BOB PETERS: Has Manitoba Hydro  
23 considered providing rate relief for ratepayers by  
24 targeting a second quartile reliability performance,  
25 rather than a first quartile reliability performance?

1                   MR. JOEL WORTLEY:    No, not in that --  
2    within our systems as they exist today we are not able  
3    to make a direct prediction of what reliability  
4    performance will result from a given level of  
5    investment; that's something we're working on.

6                   But it is also important to understand  
7    that reliability isn't the only -- the only thing at  
8    stake when it comes to investing in -- in the various  
9    systems. I think clearly on the distribution system  
10   the assets are throughout the province and public  
11   safety is a significant concern. Things like  
12   streetlight bases rusting out, potentially falling  
13   into traffic. Employee safety is another concern if  
14   we've got wood poles that are rotting and -- and  
15   employees need to be able to climb them safely so they  
16   need to be renewed on a -- before they become unsafe.

17                  And so it's a significant challenge and  
18   a complicated assessment to be able to predict what  
19   say -- what investments would not occur which would  
20   push us to acute -- second quartile performance while  
21   keeping other risks in check; that -- that requires a  
22   very complex analysis to get it right.

23                  MR. BOB PETERS:    And Manitoba Hydro's  
24   not in a position to do that at this point in time?

25                  MR. JOEL WORTLEY:    We are not in a

1 position to that at this point in time. We are  
2 currently rolling out the tools and the processes that  
3 will enable that. It's coming.

4 MR. BOB PETERS: And not to steal some  
5 thunder from Mr. -- or Dr. Williams, but it's coming  
6 in -- in approximately -- is it a three (3) to five  
7 (5) year timeline.

8 MR. JOEL WORTLEY: Yeah, that -- we  
9 were very conscious that -- that these are difficult  
10 challenges, and that it's often easy to think from the  
11 front looking in that it's going to be easy and to  
12 underestimate how long it's going to take.

13 There are tools and processes that need  
14 to be rolled out. There are data sets that need to be  
15 gathered. And then with the new processes, time has  
16 to be given for them to mature, as in, people have to  
17 get good at them. And so you want to make sure that  
18 you can trust the output.

19 And so on that basis, making sure that  
20 we're confident in the timeframe, the current idea is  
21 three (3) to five (5) years to get to that point of  
22 maturity.

23 MR. BOB PETERS: Does that maturity  
24 take it past the five (5) years, and maybe more in the  
25 five (5) to seven (7) year range?

1 MR. JOEL WORTLEY: We don't expect so  
2 at this point, no.

3 MR. BOB PETERS: On page 566 of Board  
4 counsels' fourth book of documents is another a  
5 Information Request from Manitoba Hydro. And that at  
6 the top of the page, it's highlighted that:

7 "No projects or programs identified  
8 for execution in the test years were  
9 deferred expressly to offset the  
10 impacts of major projects."

11 I read that correctly, Mr. Wortley?

12 MR. JOEL WORTLEY: You did.

13 MR. BOB PETERS: Does that suggest to  
14 this Board that no projects or programs were deferred  
15 as a result of Keeyask and Bipole III in the Manitoba/  
16 Minnesota transmission line?

17 MR. JOEL WORTLEY: The statement  
18 refers to our budgeting process that does not have a  
19 total cap as the culmination or the accumulation of  
20 business operations capital and major new generation  
21 and transmission capital; such that if the major new  
22 generation and transmission spending went up, the  
23 business operations capital wouldn't automatically go  
24 down.

25 MR. BOB PETERS: And so on page 568 of

1 the book of documents, which is the budget that we --  
2 or sorry, the comparison of the capital expenditure  
3 forecast from 15 to the capital expenditure forecast  
4 of 16, the fact that there was \$240 million less in  
5 spending over a ten (10) year horizon is not tied to  
6 offset the impacts of any major projects such as  
7 Keeyask and Bipole III, sir?

8 MR. JOEL WORTLEY: Not directly, no.  
9 The reduction in capital spending is part of our  
10 broader initiative as a company to constrain spending,  
11 but also more granularly I look at each of our  
12 distribution, transmission and generation systems to  
13 see what spending was absolutely required in the test  
14 years and what could be reduced.

15 So it's a -- it's another look at the  
16 risks on the systems, the need to balance cost and  
17 performance, and doing -- making the best choices we  
18 can about where the money needs to go.

19 MR. BOB PETERS: If we look to the far  
20 right-hand side, the ten (10) year total under 2018 to  
21 2027 on page 268, Mr. Wortley, that \$140 million, I  
22 think you've agreed, subject to check, that that's  
23 mostly tied up with the Pointe du Bois project;  
24 correct?

25 MR. HAL TURNER: I'll figure this

1 out. Two (2) projects actually --

2 MR. BOB PETERS: Mr. Turner, tell us  
3 which two (2).

4 MR. HAL TURNER: So there was a -- a  
5 project to install some new units in Pointe du Bois  
6 and also some -- a project to address some -- the  
7 structure of the facility itself to do some  
8 improvements to the facility. So both projects were  
9 suspended.

10 MR. BOB PETERS: Both projects  
11 relating to one (1) generating station?

12 MR. HAL TURNER: Correct.

13 MR. BOB PETERS: Okay. Thank you,  
14 sir. And at the bottom of the page, Mr. Wortley, we  
15 go down to that same column and we see the \$240  
16 million number in brackets that you've referenced as  
17 being the savings over ten (10) years comparing the  
18 budgeted in '15 to the budget in '16, correct?

19 MR. JOEL WORTLEY: Correct.

20 MR. BOB PETERS: And we've already  
21 talked with Mr. Turner about 140 million. The  
22 remaining hundred million dollars, a lot of that seems  
23 to be tied up in this change in unallocated target  
24 adjustment.

25 Have I got that correct, it's \$104

1 million adjustment on that line item?

2 MR. JOEL WORTLEY: Correct.

3 MR. BOB PETERS: Can you explain to  
4 the Panel what is in "unallocated target adjustment?"

5 MR. JOEL WORTLEY: These are  
6 adjustments that are put into the plan to smooth the  
7 cash flow from year to year and are bit of a -- bit of  
8 an artifact as we transition from past practices to  
9 future practices.

10 In past practices the targets were made  
11 up of particular projects forecasted to occur in  
12 particular years, and often they totalled more than we  
13 wanted to spend in a given year. And so an adjustment  
14 was put in to bring that back to the targeted level.

15 So this is something we are phasing out  
16 as we go forward, but it's still shown here as a  
17 vestige of past practice.

18 MR. BOB PETERS: Would be analogous to  
19 having a contingency fund, Mr. Wortley?

20 MR. JOEL WORTLEY: No, it would be  
21 more analogous to -- reflective of an uncertainty as  
22 to where the money is going to go in that particular  
23 year and -- but wanting to ensure that the constraint,  
24 the budget, is at the -- at a desirable level and so  
25 it's suggested down to apply appropriate rationing in

1 the budgeting process.

2 MR. BOB PETERS: And in other years  
3 this unallocated target adjustment would have been  
4 adjusted upwards; correct?

5 MR. JOEL WORTLEY: That's right.  
6 Those are years where the forecast spending does not  
7 total the target amount, largely because it's far  
8 enough out in the future that it's -- the visibility  
9 of potential spends in that timeframe is -- is not as  
10 clear as in the near term.

11 MR. BOB PETERS: So there was money in  
12 the budget, but there weren't enough projects to use  
13 up all the money?

14 MR. JOEL WORTLEY: That as -- from the  
15 current point in time and the -- the CEF, capital  
16 expenditures forecast, is a snapshot in time. It  
17 tells you what can be seen from a particular moment.  
18 From that particular moment, there was not enough  
19 visibility of projects in those years to -- to  
20 encompass the entire target.

21 MR. BOB PETERS: Thank you, sir, on  
22 page 260 -- 252 of Board counsels' fourth book of  
23 documents, Manitoba Hydro -- make it 652, please,  
24 thank you.

25 There is a chart provided by Manitoba

1 Hydro as to which proportion of the business  
2 operations capital categories cannot be deferred in  
3 the second test year that's before this Board,  
4 correct?

5 MR. JOEL WORTLEY: Correct.

6 MR. BOB PETERS: And if -- can I read  
7 this a different way, Mr. Wortley, that Manitoba Hydro  
8 is telling the Board that 100 percent of customer  
9 connections cannot be deferred in 2019.

10 MR. JOEL WORTLEY: That -- that's  
11 correct. This -- this -- these numbers were prepared  
12 to try to respond to the question of how much control  
13 does Manitoba Hydro have over spending in a given  
14 year.

15 And with customer connects the -- we  
16 are mandated to serve. So if a customer arrives and  
17 wants to be connected, we don't have the ability to  
18 put them off for a year.

19 MR. BOB PETERS: All right. Now, if I  
20 go down to the bottom of this chart under the business  
21 operation support, there is a line item called  
22 Generation, Building and Grounds.

23 And conversely to what you just  
24 answered to the Panel, Mr. Wortley, it appears  
25 Manitoba Hydro has the ability to defer 100 percent of

1 those expenditures passed the test year.

2 MR. JOEL WORTLEY: That is what the  
3 chart shows, and it reflects that these projects are  
4 not in the supply chain. They're not critical to the  
5 generation of electricity and so if -- if there was  
6 enough impetus they could be deferred, but deferring  
7 them means taking on whatever risks those projects  
8 were going to meda --- mitigate or taking on whatever  
9 additional inefficiencies or costs that come with not  
10 performing those projects. So it's a balance.

11 MR. BOB PETERS: What is the rationale  
12 for the claim that 98 percent of system load capacity  
13 projects cannot be deferred?

14 MR. JOEL WORTLEY: These again are --  
15 are projects that are required to meet regional load  
16 growth or capacity issues that need -- are needed to  
17 keep the system reliable.

18 MR. BOB PETERS: Maybe seems so long  
19 ago to me but I had understood from Ms. Morrison's  
20 evidence that Manitoba Hydro's load growth is,  
21 essentially, flat for the next six (6) years.

22 MR. JOEL WORTLEY: On average over the  
23 province, that's true but regionally, it's not. There  
24 are areas of further or growing commercial development  
25 and residential development that are leading to

1 capacity issues. There are several of them.

2 MR. BOB PETERS: If a project, Mr.  
3 Wortley, has already been started by Manitoba Hydro,  
4 Manitoba Hydro is not in a position to defer it; is  
5 that also correct?

6 MR. JOEL WORTLEY: It is certainly not  
7 our preference to defer work that's already begun.  
8 It's inefficient, costly and so we would take the view  
9 that that would be unwise to defer such work.

10 MR. BOB PETERS: Manitoba Hydro  
11 wouldn't have conducted a cost-benefit analysis to do  
12 that, but it's based on the advice of your people that  
13 that should not be deferred at this point in time?

14 MR. JOEL WORTLEY: The -- I mean, it  
15 varies from project to project. I don't think I can  
16 give you a blanket answer there.

17 MR. BOB PETERS: Okay. Does Manitoba  
18 Hydro prepare cost benefit analyses to determine  
19 whether or not a project can be paused?

20 MR. JOEL WORTLEY: If there were some  
21 question as to the overall justification for the  
22 project, if something changed much as it did with the  
23 Pointe du Bois project, yes, there would be a cost-  
24 benefit analysis performed to see if we should carry  
25 on.

1                   MR. BOB PETERS:    Looking at that same  
2 chart under System Efficiency, under the sustainment  
3 category, Manitoba Hydro is telling this Board that 81  
4 percent of the projects cannot be deferred a year or  
5 longer under system efficiency.

6                   Can you explain why that's the case?

7                   MR. JOEL WORTLEY:    In this view --  
8 sorry, give me a moment.

9

10                                   (BRIEF PAUSE)

11

12                   MR. JOEL WORTLEY:    So system  
13 efficiency in this view is -- totals \$14 million of  
14 spending in the given year and the 81 percent would be  
15 referring to a number of those projects being in  
16 flight, and therefore, not good candidates for  
17 deferral; and a smaller number being not yet started  
18 and therefore deferred, if necessary, with the  
19 associated loss in efficiency that would be gained by  
20 performing those projects.

21                   MR. BOB PETERS:    And was that -- was  
22 that done with the ben -- with a cost-benefit  
23 analysis?

24                   MR. JOEL WORTLEY:    The system  
25 efficiency projects are justified by cost benefit

1 analyses. They're directly paying back and achieving  
2 a saving somewhere else.

3 MR. BOB PETERS: But the decision to  
4 defer them, Mr. Wortley, --

5 MR. JOEL WORTLEY: Oh please don't --

6 MR. BOB PETERS: -- more accurately  
7 the decision that you're not able to defer 81 percent  
8 of them is based not on a cost-benefit analysis?

9 MR. JOEL WORTLEY: So there would be a  
10 cost-benefit analysis to justify the project to begin  
11 with. If the project is already in flight and some  
12 money has been invested to defer it at that point and  
13 forego this -- the system efficiency that was to be  
14 achieved by the project, which was justified by the  
15 project spend to begin with, it's -- unless something  
16 has changed fundamentally in the -- in the business  
17 case for the project, it would only make sense to  
18 carry on.

19 MR. BOB PETERS: Mr. Wortley, before  
20 we leave that chart that's shown on the screen at page  
21 652 of the book of documents, volume 4, has Manitoba  
22 Hydro calculated the dollar value of the projects that  
23 could be deferred?

24 MR. JOEL WORTLEY: That's where these  
25 numbers came from, yes.

1                   MR. BOB PETERS:    And so let me ask it  
2 directly then:  By turning what -- what is the value  
3 of the business operation capital projects that could  
4 be deferred past 2019 based on this chart?

5

6                                   (BRIEF PAUSE)

7

8                   MR. JOEL WORTLEY:   Subject to check, I  
9 believe it's \$160 million.

10                   MR. BOB PETERS:   Now in fairness, you  
11 might not have been enjoying all of Mr. McCallum's  
12 time on the microphone, but he indicated to the Panel  
13 that ostensibly \$100 million of savings on the capital  
14 side doesn't move the needle - I think that was his  
15 words - and I'll find a transcript reference if he  
16 needs to, but I think we can show that to the Panel if  
17 we turn to page 134 of volume 4.

18                                   This is a chart that we looked at  
19 before the morning recess and there is a line item in  
20 the top half of the page where it says "capital down  
21 \$100 million a year."

22                                   Do you see that, Mr. Wortley?

23                   MR. JOEL WORTLEY:    I do.

24                   MR. BOB PETERS:    And if you're  
25 comfortable answering; if not, Ms. Carriere's got her

1 hand poised and ready to -- to jump in.

2                   This is a sensitivity impact that  
3 Manitoba Hydro calculated to show this Board what  
4 would happen if the capital spending came down \$1  
5 million per year.

6                   Is that your understanding?

7                   MR. JOEL WORTLEY:    It is.

8                   MR. BOB PETERS:    If I said a million  
9 dollars I meant to say \$100 million.  But again, it's  
10 a different neighbourhood than I'm used to.

11                   Mr. Wortley, would the Board be correct  
12 in interpreting that line item of capital down \$100  
13 million a year as indicating that if that happened,  
14 then the requested rate increases that Manitoba Hydro  
15 presently has before this Board could be reduced by  
16 0.34 percent a year?

17                   MR. JOEL WORTLEY:    That is how I would  
18 read this chart.

19                   MR. BOB PETERS:    All right.  Well,  
20 that's consistent with what Mr. Wortley had said in  
21 terms of --

22                   MR. JOEL WORTLEY:    I should point out  
23 that the --

24                   MR. BOB PETERS:    -- I'm sorry,  
25 McCallum said --

1                   MR. JOEL WORTLEY:    -- the deferral  
2 that we talked about a moment ago from the business  
3 operations capital might push the costs out a year,  
4 maybe a little bit longer, depending on the project  
5 and how much risk is willing to be taken in deferring  
6 those, but it certainly couldn't be adjusted by \$100  
7 million a year, every year. That would leave a far  
8 too large a -- the -- the corresponding balance of  
9 risk would be unacceptable, and so the -- the -- these  
10 two (2) are not directly comparable in terms of  
11 scenarios.

12                   MR. BOB PETERS:    The risk you refer  
13 to, Mr. Wortley, is that there may be more  
14 interruptions, or there -- the interruptions that  
15 happen could be longer in duration. That's what  
16 you're referring to?

17                   MR. JOEL WORTLEY:    That's one (1)  
18 potential impact. The -- these are risks to the safe  
19 and reliable operation of the system. So it -- it  
20 could be customer impacts in terms of reliability. It  
21 could be safety to the public, safety to our own  
22 staff. These -- these all come into play.

23                   MR. BOB PETERS:    Well, we've got your  
24 -- we've got your comments on that, Mr. Wortley, but  
25 let's follow that hundred million dollars of reduced

1 annual capital expenditures. And just so that we  
2 understand what happens to the -- to the financial  
3 forecast of the Company, we saw -- we saw on page 525  
4 of Board counsels' book of documents, Volume IV, the  
5 total capital costs. And in 2018, it looks like  
6 \$3.058 billion, and in 2019, it's \$2.7 billion,  
7 correct, Mr. Wortley?

8 MR. JOEL WORTLEY: Correct.

9 MR. BOB PETERS: And of that amount,  
10 the business operations capital in the 2018 year is  
11 526 million, and it's 517 million in the second test  
12 year, 2019. Have I got that right?

13 MR. JOEL WORTLEY: Yes.

14 MR. BOB PETERS: Manitoba Hydro was  
15 asked through an information request to explain the  
16 impact of, say, a million -- no, say \$100 million  
17 reduction in spending. And I think if we go to page  
18 671 of Board counsels' fourth book of documents, we  
19 can -- we can look at that.

20

21 (BRIEF PAUSE)

22

23 MR. BOB PETERS: Ms. Carriere, we may  
24 need some assistance in explaining this from you,  
25 ma'am, but the understanding is that the Integrated

1 Financial Forecast was run to assume \$100 million of  
2 lower annual capital spending starting in 2019, ma'am?

3 MS. LIZ CARRIERE: That's correct.

4 MR. BOB PETERS: And on page 671,  
5 which we're looking at, that has a corresponding  
6 result of a increase in the net income to Manitoba  
7 Hydro in 2026 of \$60 million?

8 MS. LIZ CARRIERE: That's correct.

9 MR. BOB PETERS: And it -- it grows  
10 from 2019, where it's 2 million, all the way through  
11 to 2026, correct?

12 MS. LIZ CARRIERE: Yes, that's right.

13 MR. BOB PETERS: Is there a quick  
14 explanation as to why that wouldn't be a linear  
15 number, because it's more exponential than that.

16 MS. LIZ CARRIERE: You -- it's because  
17 each year, you're spending \$100 million, and there's  
18 assumptions around when that would go to service.  
19 Since we're -- the scenario we're trying to simulate a  
20 reduction in -- in revenue -- or a reduction in  
21 capital expenditures that -- for business operations  
22 capital, those projects tend to have a shorter in-  
23 service -- or shorter duration. So we're putting some  
24 of that into service.

25 So, you know, you're only seeing in --

1 in 2019, 100 million, basically half of that going  
2 into service. In the second year, you've got the full  
3 hundred million plus another half of the hundred  
4 million going into service. So only that portion of  
5 your -- your finance expense and depreciation are  
6 being -- impacting the income statement.

7                   So that's -- as you're putting more in-  
8 service, you're -- you're -- or taking more out of  
9 service, technically, because this is a down scenario,  
10 then you're seeing the -- the -- on a cumulative  
11 effect, more and more being pulled out of the -- out  
12 of the -- the in-service and the -- and the associated  
13 carrying -- carrying costs. As Mr. Wortley suggested,  
14 this assumes a permanent reduction of roughly a  
15 billion dollars over the ten (10) year period.

16                   MR. BOB PETERS:    And if we turn, Ms.  
17 Carriere, to page 672, the next page, in the 2027 year  
18 -- excuse me -- what we see is that the equity ratio  
19 percentage improves. If we scroll up -- a bit further  
20 down, please -- and the at the bottom of the page,  
21 there we see the equity ratio improves by 2 percent by  
22 2027, and 7 percent by 2034?

23                   MS. LIZ CARRIERE:    Yes, I see that.

24                   MR. BOB PETERS:    On page 675 of Board  
25 counsels' fourth book of documents, we have the

1 corresponding cash flow statement, Ms. Carriere. And  
2 I take it this cash flow statement assumes that there  
3 is \$100 million less expended under the property,  
4 plant, and equipment line, net of contributions?

5 MS. LIZ CARRIERE: That's correct.

6 MR. BOB PETERS: It shows up as a  
7 positive number because this is generally a very large  
8 negative number, correct, that is, the property,  
9 plant, and equipment investment?

10 MS. LIZ CARRIERE: Yes. Property,  
11 plant, and equipment on the cash flow statement is  
12 shown as a cash outflow. That's why it's negative.  
13 So here, we're reducing the cash outflow, so it's  
14 showing as a positive number here.

15 MR. BOB PETERS: And the result in the  
16 bottom right-hand corner is that Manitoba Hydro has  
17 \$545 million of more cash by the end of 2026? That's  
18 after eight (8) years of reduced capital spending?

19 MS. LIZ CARRIERE: Yes. The cash  
20 balance at that point in time would be \$545 million  
21 higher.

22 MR. BOB PETERS: Higher than what was  
23 showed in your other IFF16 update plus interim?

24 MS. LIZ CARRIERE: That's correct.

25 MR. BOB PETERS: And I don't want to

1 dwell on this, but when I look at the financing  
2 activity, middle portion of the -- the chart, it  
3 appears that Manitoba Hydro assumes borrowing \$200  
4 million less in 2019, and then also borrowing 200  
5 million less in 2020, correct?

6 MS. LIZ CARRIERE: That's correct.  
7 You're deferring the need for issuing long-term debt.

8 MR. BOB PETERS: So that would mean  
9 Manitoba Hydro has borrowed \$400 million less over the  
10 eight (8) years?

11 MS. LIZ CARRIERE: That's correct.

12 MR. BOB PETERS: Now, let's follow  
13 that through even a bit further to understand the  
14 impact of the assumed hundred million dollars of  
15 annual reduction in capital spending on Manitoba  
16 Hydro's new modified cash flow to cash expense  
17 analysis.

18 And we did that way back in Volume II  
19 of Board counsels' book of documents, on page 358.  
20 And we'll have to put on the screen for, Ms. Carriere,  
21 if we could. That'd be Volume II, page 358.

22 And just so we're oriented on this  
23 page, Ms. Carriere, the heading, figure 2.6., this is  
24 Manitoba Hydro's IFF16 integrated financial forecast  
25 16 updated with interim, but it -- instead of using

1 the rates that Manitoba Hydro is proposing, it reverts  
2 back to a 3.95 percent rate increase?

3 MS. LIZ CARRIERE: That's correct.

4 MR. BOB PETERS: So then if we look,  
5 Ms. Carriere, at the bottom, and we see in the year  
6 2019, that Manitoba Hydro, under this analysis, shows  
7 a cash flow deficiency of \$99 million, correct?

8 MS. LIZ CARRIERE: Yes, that's  
9 correct.

10 MR. BOB PETERS: Has -- does it  
11 follow, then, that reducing the -- the capital  
12 expenditures by a hundred million dollars would make  
13 that cash flow positive to the extent of a million  
14 dollars?

15 MS. LIZ CARRIERE: Well, if you're  
16 looking at this purely mathematically, yes, it would.  
17 But what you're not seeing here is, as Mr. Wortley was  
18 alluding to, was any changes to the cash receipts from  
19 customers for, you know, any lost revenue, either  
20 domestic or export revenue. You're also not seeing  
21 the cost of maintaining the system that would  
22 eventually go up.

23 MR. BOB PETERS: And Mr. Wortley --  
24 and -- and Ms. Carriere, Manitoba Hydro has not yet  
25 been able to analyze what the loss of revenue would be

1 if there was a reduction in the business operations  
2 capital to the extent of a hundred million dollars a  
3 year?

4 MS. LIZ CARRIERE: That's correct.

5 MR. BOB PETERS: And likewise, Ms.  
6 Carrier, if there is an increase in the cost of  
7 maintenance for initially deferring a project and then  
8 picking it up some years down the road, at this point  
9 in time, Manitoba Hydro isn't able to quantify what  
10 that additional cost would necessarily be?

11 MS. LIZ CARRIERE: That's correct.

12 MR. BOB PETERS: And is it the Board  
13 to understand that at the end of this three (3) to  
14 five (5) years, Mr. Wortley, that we talked about,  
15 Manitoba Hydro would expect to be in a position to  
16 quantify those types of decisions?

17 MR. JOEL WORTLEY: The objective of  
18 the -- the planning processes that we're -- we're  
19 deploying right now are to have a longer outlook on  
20 the planning horizon, and a more confident outlook on  
21 the planning horizon, such that we wouldn't expect to  
22 stop/start a project. That would be highly irregular.

23 We do expect to be able to have more  
24 confidence in -- in how much money we need to support  
25 the system, and to have confident plans that we can

1 run through from beginning to end without disruption.

2 MR. BOB PETERS: And that state would  
3 be expected by Manitoba Hydro in approximately three  
4 (3) to five (5) years from today?

5 MR. JOEL WORTLEY: That's our current  
6 outlook, yes.

7 MR. BOB PETERS: Mr. Chair, at this  
8 time, I'd like to thank Manitoba Hydro's revenue  
9 requirement panel witnesses for their responses to my  
10 questions. I'll have no further questions at this  
11 time, and -- and honouring my agreement with counsel  
12 opposite, I would suggest the Board call on counsel  
13 for the Consumers Coalition for any questions they may  
14 have of these witnesses. Thank you.

15 THE CHAIRPERSON: Thank you. Dr.  
16 Williams...?

17 DR. BYRON WILLIAMS: Yes. Thank you,  
18 and good afternoon, members of the panel. I'll note  
19 that Ms. Desorcy from the Consumer -- Consumers  
20 Association of Canada, Manitoba branch, is in the back  
21 row, just to the left of Cheryl, with articling  
22 student-at-law, Robert Walichnowski. Cheryl, we'll  
23 give you the spelling at the coffee break.

24 Just before we start, we do have an  
25 exhibit, being Coalition 32-1 to distribute. I -- I

1 note from this morning, My Learned Friend Ms. Ramage  
2 expressed some concerns with our efforts to notify  
3 them, being Manitoba Hydro, of intended documents. So  
4 certainly, we're happy to deal with -- if there is an  
5 objection, to deal with them as they arise. But I  
6 just will indicate to the Board, we certainly  
7 undertook our efforts on Friday and the weekend with  
8 the best of intentions, trying to give Manitoba Hydro  
9 a heads-up as early as possible in terms of potential  
10 documents.

11                   We did make one (1) error in that we  
12 sent them the wrong chapters reference for -- for  
13 Bonbright. We -- we believe we clarified that on  
14 Sunday and provided the actual references to them. So  
15 there was certainly no ill intent. I know My Friend  
16 also observes that some of the materials that we  
17 alerted Hydro that we might file weren't presented in  
18 the sustaining capital material today, and I would  
19 simply note, that's because they're not related to  
20 sustaining capital. We will have a -- a couple of  
21 matters tomorrow related to export revenues that we  
22 tried to give notice to Manitoba Hydro of on Friday.

23                   I think the con -- current third  
24 concern of Manitoba Hydro is capsulated in Tabs 1  
25 through 6 of this book of documents. These are

1 documents that were referenced expressly in the METSCO  
2 evidence, both in the main text and in the appendix.  
3 And you can see where they're referenced on the  
4 record. So certainly, our clients believe they're  
5 quite properly on the record. They would have  
6 expected that Manitoba Hydro, in the course of  
7 reviewing METSCO's evidence for rebuttal, would have  
8 at least add -- begun to address their minds to these  
9 material.

10                   But for Board members who were here  
11 during the last General Rate Application, I'll simply  
12 say that you've heard from Manitoba Hydro this  
13 afternoon of where they want to be in three (3) to  
14 five (5) years, whether that's in predictive modelling  
15 or in terms of dialogue with consumers. These  
16 documents which are referenced on the record in  
17 METSCO's evidence are illustrative of where best  
18 practice is. And for our clients, and also for the  
19 Board members who were here a couple years ago, it's  
20 very hard to visualize, in our respectful submission,  
21 what do we mean by "predictive modelling"? What do we  
22 mean by "alternative scenario analysis"?

23                   So these are excerpts from the record.  
24 We're not asking Manitoba Hydro to become an expert in  
25 EPCOR's scenario planning, but we want to use them as

1 illustrative of -- of what good practice scenario  
2 planning looks like, referencing documents that are  
3 already on the record.

4                   So we're, again, happy to hear any  
5 objections at the appropriate point in time, but I --  
6 I hope with that, those comments -- that may allay the  
7 concerns of Manitoba Hydro, and any -- if -- if there  
8 were any of the Board.

9                   THE CHAIRPERSON:     That's fine, Mr.  
10 Williams. We'll -- Dr. Williams, we will -- we'll  
11 deal with objections if and when they arise.

12

13 --- EXHIBIT NO. CC-32-1:     Coalitions Book of  
14   Documents.

15

16 CROSS-EXAMINATION BY DR. BYRON WILLIAMS:

17                   DR. BYRON WILLIAMS:     Thank you, and  
18 good afternoon, members of the Hydro panel. Ms.  
19 Carriere, I feel I'm going to neglect you this  
20 afternoon, largely, but you know, pop -- pop up  
21 whenever you feel like it. I suspect most of my  
22 questions will go to Mr. Wortley, but if there are  
23 more appropriate -- whether to Mr. Steele, Turner, or  
24 Neufeld, again, I leave it to your panel's discretion  
25 in terms of how you handle the question.

1           Mr. Wortley, I've got a tough one for  
2 you right off the bat. You'll agree that Manitoba  
3 Hydro enjoys a monopoly in the retail sale of power in  
4 Manitoba, sir?

5           MR. JOEL WORTLEY:    Yes, I would.

6           DR. BYRON WILLIAMS:   And you may have  
7 to speak up. I can -- I can barely hear you, which  
8 may be my hearing, sir.

9           And the real -- the -- the upshot of  
10 that is that to the extent that residential customers  
11 are unhappy with either the price or quality of Hydro  
12 service, there is no other retail provider of -- of  
13 Hydro electricity in Manitoba, agreed?

14          MR. JOEL WORTLEY:    I would agree.

15          DR. BYRON WILLIAMS:   In that context,  
16 residential customers cannot vote with their  
17 pocketbooks, correct?

18          MR. JOEL WORTLEY:    Correct.

19          DR. BYRON WILLIAMS:   They -- and given  
20 that mon -- monopoly, you'll agree, Mr. Wortley, that  
21 Manitoba Hydro has a duty to steward its resources  
22 with prudence and care, agreed?

23          MR. JOEL WORTLEY:    Yes. I believe  
24 I've said several times that Manitoba Hydro needs to  
25 do its best to get the right balance of cost

1 performance and risk for the customer.

2 DR. BYRON WILLIAMS: And that right  
3 balance. Always has to be considered in light of the  
4 recognition that there are not unlimited resources,  
5 agreed, sir?

6 MR. JOEL WORTLEY: That -- that I --  
7 yes, that's -- that's the definition of balance  
8 between cost, performance and risk. If -- if one (1)  
9 of them was unlimited, there wouldn't need to be  
10 balance.

11 DR. BYRON WILLIAMS: And recognizing  
12 scarce resources, Hydro as you've agreed, has a duty  
13 to be mindful of both trade-offs and risks, agreed,  
14 sir?

15 MR. JOEL WORTLEY: I would agree.

16 DR. BYRON WILLIAMS: And not all  
17 investments in Manitoba Hydro's electrical  
18 infrastructure are created equal, sir?

19 MR. JOEL WORTLEY: No. That's why we  
20 have systems for evaluating them.

21 DR. BYRON WILLIAMS: And there may be  
22 some which are given a higher pri -- priority, whether  
23 for reasons of economics or real -- reliability,  
24 correct?

25 MR. JOEL WORTLEY: Correct.

1 DR. BYRON WILLIAMS: And there may be  
2 some investments, sir, which are just not necessary,  
3 agreed?

4

5 (BRIEF PAUSE)

6

7 MR. JOEL WORTLEY: There are  
8 investments that are considered and never -- and never  
9 executed. So, yes, I would agree that sometimes, what  
10 appears to be initially an investment of -- of merit,  
11 after further investigation, turns out not to be.

12 DR. BYRON WILLIAMS: And turning to  
13 asset management and -- perhaps we'll see if you agree  
14 with this suggested definition, sir.

15 I'll suggest to you that asset  
16 management today involves maximizing the value of the  
17 existing access base, serving customers by providing  
18 stable and reliable services, and making economically  
19 and operationally optimal decisions regarding whether,  
20 how and when to intervene in the asset base?

21 MR. JOEL WORTLEY: I'm not familiar  
22 with that particular definition.

23 DR. BYRON WILLIAMS: Any discomfort  
24 with that definition, sir?

25 MR. JOEL WORTLEY: Not at face value,

1 no.

2 DR. BYRON WILLIAMS: And as you  
3 discussed with My Learned Friend, Mr. Peters, even at  
4 a time of substantial investment by Manitoba Hydro in  
5 new generation and transmission assets, over the next  
6 decade, there are billions of dollars projected to be  
7 spent in terms of sustaining capital exp --  
8 expenditures, agreed?

9 MR. JOEL WORTLEY: I would agree.

10 DR. BYRON WILLIAMS: Kristen, if you  
11 can turn to Appendix 5.1, being the UMS report for  
12 Manitoba Hydro's General Rate Application filing. And  
13 Kristin, if I call you Diana from time to time, you'll  
14 -- what's that -- you'll forgive me, and also see it  
15 as a compliment, because you're matching Diana's  
16 tremendous per -- performance.

17

18 (BRIEF PAUSE)

19

20 DR. BYRON WILLIAMS: Mr. Wortley,  
21 you're familiar with the UMS report?

22 MR. JOEL WORTLEY: I am.

23 DR. BYRON WILLIAMS: And perhaps we  
24 can turn to page 6. In essence, I'll suggest to you  
25 that UMS Group assessed Manitoba Hydro's asset

1 management practices against ISO -- ISO 55,000, and  
2 its general understanding of best practice asset  
3 management. Would that be fair, sir?

4 MR. JOEL WORTLEY: That would be fair.

5 DR. BYRON WILLIAMS: And what you see  
6 before you, sir, being page 6 of Appendix 5.1, is an  
7 AM maturity scale running on the left-hand side from  
8 innocence through awareness, development, competence,  
9 and towards excellence. Do you see that, sir?

10 MR. JOEL WORTLEY: I do.

11 DR. BYRON WILLIAMS: And in essence,  
12 Mani -- UMS defines competence as maturity level 3,  
13 correct?

14 MR. JOEL WORTLEY: Correct.

15 DR. BYRON WILLIAMS: Excellence is  
16 maturity level 4, agreed?

17 MR. JOEL WORTLEY: Agreed.

18 DR. BYRON WILLIAMS: And development  
19 is maturity level 2, sir, agreed?

20 MR. JOEL WORTLEY: Agreed.

21 DR. BYRON WILLIAMS: And this report  
22 was provided to Manitoba Hydro in December 2016, on or  
23 about, sir, subject to check?

24 MR. JOEL WORTLEY: That's correct.

25 DR. BYRON WILLIAMS: And overall, as a

1 collective, UMS ranked Manitoba Hydro as a one point  
2 five (1.5), sir; agreed?

3 MR. JOEL WORTLEY: Agreed.

4 DR. BYRON WILLIAMS: That's somewhere  
5 between the awareness and developmental scale, agreed?

6 MR. JOEL WORTLEY: Agreed.

7 DR. BYRON WILLIAMS: Far below the  
8 numb -- maturity level 3 ranking for competence,  
9 agreed?

10 MR. JOEL WORTLEY: Agreed.

11 DR. BYRON WILLIAMS: And in terms of  
12 the individual business units, sir, generations scored  
13 one point seven (1.7), correct?

14 MR. JOEL WORTLEY: Correct.

15 DR. BYRON WILLIAMS: Transmission, one  
16 point six (1.6), agreed?

17 MR. JOEL WORTLEY: Agreed.

18 DR. BYRON WILLIAMS: And customer  
19 service and distribution, one point three (1.3), sir?

20 MR. JOEL WORTLEY: Yes.

21 DR. BYRON WILLIAMS: We can go there  
22 if you need it, sir. Well, let's -- let's go back a  
23 page, to page 5 at the top, please, Kristin. You'll  
24 see a statement by UMS at the very top of this page,  
25 that in previous utility management transformations, I

1 -- they suggest that utilities have seen significant  
2 improvements in productivity and overall cost savings.  
3 Do you see that, sir?

4 MR. JOEL WORTLEY: I do.

5 DR. BYRON WILLIAMS: And just to be  
6 fair, UMS has not promised those type of savings to  
7 Manitoba Hydro?

8 MR. JOEL WORTLEY: No. They're just  
9 quoting their past experience and their past  
10 experience with different companies from which the  
11 starting point is not particularly known. And so it  
12 is worth noting that your starting point obviously  
13 reflects or influences what savings you may be able to  
14 achieve.

15 So Manitoba Hydro, already being at one  
16 point five (1.5), and therefore ahead of other  
17 companies, as noted in the US -- UMS report, who may  
18 be at zero, may not have as much potential to save as  
19 others, but we won't know until we work our way in and  
20 start to make those assessments.

21 DR. BYRON WILLIAMS: Are you aware  
22 whether or not UMS did studies for Toronto Hydro, sir?

23 MR. JOEL WORTLEY: I couldn't tell you  
24 off the top of my head, no.

25 DR. BYRON WILLIAMS: So you're not

1 aware of the score that Toronto Hard -- Hydro received  
2 in terms of its studies, sir?

3 MR. JOEL WORTLEY: I am not.

4 DR. BYRON WILLIAMS: Okay. Now, at --  
5 I -- I wonder if we can turn to -- quickly to page 7,  
6 in the middle of the page, and then we'll go to page  
7 8. Go down the Key Gaps.

8 Just on this page, Mr. Wortley, you'll  
9 agree that UMS is discussing some of what they  
10 articulated in December of 2016 as the Key Gaps in  
11 terms of the -- between Manitoba Hydro and best  
12 practice, agreed?

13 MR. JOEL WORTLEY: That's right.

14 DR. BYRON WILLIAMS: And we'll come  
15 back to this page, but we'll go to page 8. Right  
16 there is fine, thank you. And focusing your attention  
17 on the second full paragraph, sir, UMS informed  
18 Manitoba Hydro that there was no one (1) group or  
19 function responsible at that point in time for  
20 optimizing total asset life cycle costs, agreed?

21 Do you see that reference, sir?

22 MR. JOEL WORTLEY: I do.

23 DR. BYRON WILLIAMS: And UMS also  
24 informed Manitoba Hydro that, from its observations,  
25 most asset management efforts were focused on capital

1 spending, with minimal attention given to optimizing  
2 O&M, which is a key part of the asset life cycle,  
3 agreed?

4 MR. JOEL WORTLEY: That's what it  
5 says, yes.

6 DR. BYRON WILLIAMS: And by O&M, sir,  
7 you understand that to mean operations and  
8 maintenance?

9 MR. JOEL WORTLEY: I do.

10 DR. BYRON WILLIAMS: You'll see as  
11 well a concern being expressed by UMS in terms of the  
12 lack of form -- in the next paragraph, the lack of  
13 formal data management and government processes and  
14 metrics, agreed?

15 MR. JOEL WORTLEY: No. I'm sorry, you  
16 used the word "concern," and I think it's important to  
17 understand that the UMS report was commissioned to  
18 look for opportunities for improvement. So this was  
19 not an audit. This is not a -- a critique. It was a  
20 review of processes in comparison to best practice to  
21 see where there was opportunity to improve.

22 DR. BYRON WILLIAMS: Fair enough. So,  
23 sir, they observed a lack of formal data management,  
24 and government processes and matrices, agreed?

25 MR. JOEL WORTLEY: That's right.

1 DR. BYRON WILLIAMS: And going to the  
2 top -- the bottom of page 7 and rolling onto page 8,  
3 so if we can keep both screens, that's -- you also see  
4 an observation, sir from UMS in December of 2016 that  
5 there are no corporate risk standards, tolerance  
6 levels, or risk assessment requirements to guide the  
7 business units, leading to a situation in which risk  
8 is being avoided rather than managed. Do you see that  
9 reference, sir?

10 MR. JOEL WORTLEY: I do.

11

12 (BRIEF PAUSE)

13

14 DR. BYRON WILLIAMS: Just scrolling  
15 more fully on to page 7, there's just one (1) more of  
16 these observations. Just one (1) second. Right there  
17 is fine, Kristin.

18 Under Key Gaps, the second paragraph,  
19 the second line, sir, you'll see as line -- sorry, the  
20 third line, the -- the second sentence, you'll see as  
21 well the observation by UMS that asset management has  
22 developed independently in each business unit, and  
23 that the asset management functions are split within  
24 the business units, suggesting that it has led to a  
25 lack of standardization of processes and hindered the

1 sharing of best practices. You see that observation,  
2 sir?

3 MR. JOEL WORTLEY: I do.

4 DR. BYRON WILLIAMS: Kristin, if you  
5 can move to page 34 of -- of this document. And, sir,  
6 we won't go through these at this point in time, but  
7 you'll agree with me that in terms of closing the  
8 competence gap, UMS has made twenty-eight (28)  
9 recommendations to Manitoba Hydro? You can scroll  
10 through if Mr. Wortley's checking my math.

11 MR. JOEL WORTLEY: Yeah. That's  
12 correct.

13 DR. BYRON WILLIAMS: And I understand  
14 that, as it stands today, Manitoba Hydro has not  
15 developed a -- an official response to these  
16 recommendations because that will arise in Phase 3 of  
17 its overall rollout of its asset management strategy.

18 Is that correct, sir?

19 MR. JOEL WORTLEY: I would describe in  
20 that UMS has -- was hired to do a gap assessment,  
21 which they've done, and they've identified a number of  
22 areas where there are -- there is room for  
23 improvement. But they've also laid out a four (4)  
24 step process for closing those gaps. And that  
25 involves, first of all, creating the right

1 environment, designing the change, implementing the  
2 change, and then working on moving towards excellence.

3           And so there needs to be a plan built  
4 to follow that path. And so we are currently working  
5 at creating the right environment, and as that evolves  
6 out of our corporate restructuring and our voluntary  
7 departure program, we'll be in a place -- we'll be  
8 well situated to map out the -- the rest of the  
9 journey and -- and execute.

10           And so I don't see a future where we  
11 write a rebuttal to Man -- or to UMS's gap assessment.  
12 I do see a future where we embrace it and develop a  
13 plan to close the gaps where it's beneficial.

14           It's important understand, amongst  
15 other things, that everything comes at a cost, and  
16 standardization is a great example. Standardization  
17 is worthwhile, if you need to be able to compare the  
18 output on a common basis or a common denominator, if  
19 there's value of that in your decision-making. If  
20 there's not, standardization comes at a cost because  
21 you've got a police and promote consistent practice  
22 across your organization.

23           So we want to be very careful to make  
24 sure that as we institute the process improvements and  
25 as we close gaps that each one of them brings a

1 benefit, commensurate or -- or in proportion, to the  
2 cost. 'Cause these are not going to be inexpensive.  
3 These are -- are significant endeavours that require  
4 broad deployment across a large organization. That  
5 means a lot of change management. That means a lot of  
6 working with -- with people who are busy trying keep  
7 the lights on, and so we're taking them away from  
8 their business; we want to make sure that it's  
9 worthwhile.

10                   So we will move forward, but will do it  
11 in a very deliberate way, making sure that every step  
12 is worthwhile.

13                   DR. BYRON WILLIAMS:    Mr. Wortley, I  
14 have no doubt your -- your response will be  
15 deliberate. I'll just note, I'm on a clock, so I let  
16 you finish that answer, and I'm always prepared to,  
17 but I'll -- I'll try and keep my -- my questions more  
18 directive.

19                   MS. HELGA VAN IDERSTINE:   Thank you,  
20 Mr. Wil -- Dr. Williams. I appreciate letting him  
21 respond fully.

22

23 CONTINUED BY DR. BYRON WILLIAMS:

24                   DR. BYRON WILLIAMS:    The -- Mr.  
25 Wortley, you -- you talked about the future. I'd like

1 to talk a bit about the past. And I'll direct your  
2 attention to Tab 7, page 127, of the Coalition's book  
3 of documents, being 32-1.

4 And, Mr. Wortley, this being an excerpt  
5 from Board Order 116/08.

6 You see that, sir?

7 MR. JOEL WORTLEY: I do.

8 DR. BYRON WILLIAMS: Okay. And --  
9 and, Mr. Wortley, as we turn to -- to page -- excuse  
10 me just one (1) second.

11 I'll -- I'll direct your attention to  
12 page 128 of the document.

13 And you see that commentary here from  
14 the Manitoba Public Utilities Board, in terms of  
15 sustaining capital expenditures, being the first two  
16 (2) paragraphs. And you'll see the Public Utilities  
17 Board agreeing with Intervenors on the need for a pera  
18 -- periodic asset condition assessment study.

19 You see that, sir?

20 MR. JOEL WORTLEY: I do.

21 DR. BYRON WILLIAMS: And this is the  
22 Public Util -- this -- this is the Public Utilities  
23 Board, back in 2008, seeking asset condition  
24 assessment information.

25 Agreed?

1 MS. HELGA VAN IDERSTINE: All right.  
2 I think Mr. -- again, Dr. Williams...

3

4 (BRIEF PAUSE)

5

6 MS. HELGA VAN IDERSTINE: I -- I  
7 wanted to alert Dr. Williams to the fact that, in case  
8 he was a -- wasn't aware, that Mr. Barnlund will be  
9 coming to speak to -- on another panel, and he might  
10 be, again, the right person to talk about with the  
11 Board orders.

12 DR. BYRON WILLIAMS: With respect,  
13 this -- this goes to the credibility of -- of Manitoba  
14 Hydro in undertaking and responding to Board orders  
15 specifically relating to sustaining capital  
16 management. So these are the proper questions for  
17 this panel.

18 MS. HELGA VAN IDERSTINE: So, Mr.  
19 Chair, I just do want to raise the fact that Mr.  
20 Barnlund is the person responsible within Manitoba  
21 Hydro for responding and dealing with the Board  
22 orders. And I think that that -- he'd be the  
23 appropriate person to respond to questions relating to  
24 them.

25 THE CHAIRPERSON: I'm going to look -

1 - let the ques -- you know, Mr. Barnlund had some --  
2 we've got all sorts of different issues arising from  
3 Board orders. I think that we'll let this go ahead.

4 But if the witness needs time to read  
5 this, certainly the witness can take whatever time's  
6 required to read the -- the Board order if he's not  
7 familiar with it.

8

9 CONTINUED BY DR. BYRON WILLIAMS:

10 DR. BYRON WILLIAMS: Mr. Wortley,  
11 you're -- you've been a long time employee of Manitoba  
12 Hydro?

13 MR. JOEL WORTLEY: Fifteen (15) years.

14 DR. BYRON WILLIAMS: You're familiar  
15 with the dialogue before the Public Utilities Board  
16 over that last fifteen (15) years?

17 MR. JOEL WORTLEY: Not directly. This  
18 is my first direct participation in a -- in a rate  
19 hearing.

20 DR. BYRON WILLIAMS: Do you need a  
21 couple minutes to review this material, Sir?

22 MR. JOEL WORTLEY: That really depends  
23 what kind of questions you asked me about it.

24 DR. BYRON WILLIAMS: Well, let's --  
25 let's just leave that open to you, sir.

1                   You see here, sir, the Board, in 2008,  
2 is seeking periodic asset condit -- asset condition  
3 assessment studies.

4                   Do you see that, sir. You've not  
5 reviewed this book of documents, Sir?

6

7

(BRIEF PAUSE)

8

9                   MS. HELGA VAN IDERSTINE:    Sor --  
10 sorry, Mr. Chair. I do want to raise the point that  
11 these are the documents that we were provided last  
12 evening. So to the extent that Mr. -- Dr. Williams is  
13 raising the issue of whether or not they've reviewed  
14 them, you know, again I -- it's come back to saying --  
15 they -- we had them focus on the areas of their  
16 expertise. Mr. Barnlund is the appropriate person to  
17 be focusing on that, and he just received these, so.

18                  DR. BYRON WILLIAMS:    Sir, the -- these  
19 were to the Board -- these were also the subject of a  
20 Public Utilities Board Information Request, being  
21 1-89(a) to (c), in which Manitoba Hydro provided this.  
22 So this is not anything new to Manitoba Hydro.

23                  THE CHAIRPERSON:       Well, if the  
24 witness requires time, I -- you know, I -- I don't  
25 know, Dr. Williams, If we need to go through each tab,

1 so the witness has time to review it, if the witness  
2 hasn't it. I still think that this is the appropriate  
3 -- if -- if the issue relates to this panel, the fact  
4 that Mr. Barnlund is the person responsible for  
5 orders, I -- I still think it should be going through  
6 this panel. But the witness needs an opportunity to  
7 review the material in order comment if the witness  
8 doesn't have it.

9                   So if counsel wants to take ten (10)  
10 minutes and advise and discuss what issues are going  
11 to arise or he's going to address, so that the witness  
12 has -- or witnesses on this panel have an opportunity  
13 to review the material, you know, that's fine.

14                   What I don't want, is I don't want to  
15 have every question, you know, falling into this --  
16 into this area because it -- it's going to be delaying  
17 matters considerably.

18                   DR. BYRON WILLIAMS:     Just for  
19 efficiency reasons, and thank you for the Board's  
20 guidance, I would suggest then that we sit down for --  
21 sit -- sit down for a few minutes and we can go  
22 through this with Manitoba Hydro.

23                   THE CHAIRPERSON:       Okay. We'll -- how  
24 long would you need?

25                   DR. BYRON WILLIAMS:     Well, personally,

1 I wouldn't have expected this would've taken very  
2 long, so --

3 THE CHAIRPERSON: Well --

4 DR. BYRON WILLIAMS: -- I'm going to  
5 suggest fifteen (15) to twenty (20) minutes.

6 THE CHAIRPERSON: Okay. We'll give  
7 twenty (20) minutes -- we'll adjourn for twenty (20)  
8 minutes and counsel can meet; 2:40, thank you.

9

10 --- Upon recessing at 2:20 p.m.

11 --- Upon resuming at 2:41 p.m.

12

13 THE CHAIRPERSON: Mr. Barnlund, how  
14 nice of you to join us.

15 MS. HELGA VAN IDERSTINE: Mr. Barnlund  
16 needs to be sworn in before he can give any evidence  
17 on this panel. So if we could have Mr. Simonsen take  
18 care of that for us.

19 THE CHAIRPERSON: Was he not sworn in  
20 earlier? Okay.

21 GREG BARNLUND, Sworn

22

23 THE CHAIRPERSON: Dr. Williams...?

24

25 CONTINUED CROSS-EXAMINATION BY DR. BYRON WILLIAMS:

1 DR. BYRON WILLIAMS: Yes, and good  
2 afternoon and welcome, Mr. Barnlund.

3 I'm going to be directing some  
4 questions to you. I may have a couple follow-up  
5 questions on this with Mr. Wortley as well, but, Mr.  
6 Barnlund, perhaps we can start with tab 7 of the  
7 Coalition's book of documents, page 129 -- 128, excuse  
8 me, towards the top of page 128. Thank you.

9 Mr. Barnlund, you'll agree this is an  
10 excerpt from Order 116/08?

11 MR. GREG BARNLUND: Yes, sir, it is.

12 DR. BYRON WILLIAMS: And, sir, you're  
13 a long time employee of regulatory affairs?

14 MR. GREG BARNLUND: Yes.

15 DR. BYRON WILLIAMS: And as part of  
16 your duties in regulatory affairs, you're responsible  
17 for follow-up to Board Orders?

18 MR. GREG BARNLUND: I am, sir.

19 DR. BYRON WILLIAMS: And for  
20 communicating those with -- with -- with the requisite  
21 departments; agreed?

22 MR. GREG BARNLUND: That's correct,  
23 yeah.

24 DR. BYRON WILLIAMS: And, sir, here  
25 you'll see and -- and no doubt will recall the Board

1 entering into a discussion related to capital  
2 expenditures that are not related to major generation  
3 and transmission projects.

4 Do you see that in the first paragraph,  
5 sir?

6 MR. GREG BARNLUND: Yes, sir, I do.

7 DR. BYRON WILLIAMS: And nowadays we  
8 call that sustaining capital?

9 MR. GREG BARNLUND: Correct.

10 DR. BYRON WILLIAMS: And the -- the  
11 Board, you'll agree, sir, is directing Manitoba Hydro  
12 to provide a asset condition assessment study.

13 Would that be fair?

14 MR. GREG BARNLUND: Yes, sir.

15 DR. BYRON WILLIAMS: And, sir, a -- so  
16 this is back in 2008 and, Mr. Barnlund, perhaps if we  
17 can go to the next page, being page 129 of Coalition  
18 32-1. Towards the bottom you'll see that the Board is  
19 discussing Mr. Harper's evidence in terms of asset  
20 condition assessments.

21 Do you see that, sir?

22 MR. GREG BARNLUND: Yes, that's the  
23 Board -- literally that discussing Mr. Harper's  
24 evidence. Yes.

25 DR. BYRON WILLIAMS: And you'll

1 recall, sir, that Mr. Harper were -- was an evid -- a  
2 witness for the Coalition in that hearing?

3 MR. GREG BARNLUND: Yes.

4 DR. BYRON WILLIAMS: Okay and if we go  
5 to the top of the next page, being page 130. The  
6 point I really wish to draw you to, Mr. Barnlund, is -  
7 - is if we focus on Mr. Harper's evidence as  
8 characterized by the Board, he's talking about in the  
9 first full paragraph, the issue of prioritizing assets  
10 by way of asset condition assessment; agreed?

11 MR. GREG BARNLUND: Yes, that's  
12 correct.

13 DR. BYRON WILLIAMS: And so, Mr.  
14 Barnlund, I'm going to suggest to you that back in  
15 2008 the dialogue before the Public Utilities Board  
16 was about two (2) things; one was getting a data  
17 assessment in terms of Manitoba Hydro's -- as it  
18 related to gen -- generation, distribution and  
19 transmission; and secondly, how it prioritized  
20 expenditures.

21 Would that be fair, sir?

22 MR. GREG BARNLUND: I think it's fair  
23 to say that -- that the Board was requesting that we  
24 provide a condition report. I'm not so sure -- sure  
25 that we went so far as to say, a report on the

1 prioritization of expenditures.

2 DR. BYRON WILLIAMS: And that's fair  
3 enough, sir, and I'm not -- I'm not asking you to  
4 agree that there was a request for report on the  
5 prioritization of expenditures, but you'll agree that  
6 there was a dialogue in terms of Manitoba Hydro's  
7 prioritization of those expenditures; agreed?

8 MR. GREG BARNLUND: That was a matter  
9 that was discussed at that hearing, yes.

10 DR. BYRON WILLIAMS: Turning to tab 8  
11 and -- and let's be careful --

12 MR. JOEL WORTLEY: Just before we  
13 leave that one, if I could, for just a quick second.  
14 I do note in the following paragraph that Mr. Harper  
15 further recommends that Manitoba Hydro undertake  
16 regular asset condition assessments every two (2) to  
17 three (3) years.

18 And I just wanted to note that within  
19 best practices and asset management, the frequency of  
20 your condition assessment should be tied to the  
21 decisions you need to make around the asset. And that  
22 the idea of a blanket frequency like this would not be  
23 an efficient way to proceed.

24 DR. BYRON WILLIAMS: Mr. Wortley,  
25 thank you for that. You're not suggesting that it

1 would be efficient to -- to not supply an assessment  
2 for many years, though, are you?

3 MR. JOEL WORTLEY: I'm suggesting that  
4 the data acquisition needs to be programmed, as  
5 required, to manage the assets.

6 DR. BYRON WILLIAMS: Mr. -- Mr.  
7 Barnlund, and I guess Mr. Wortley, you've read the  
8 material now?

9 MR. JOEL WORTLEY: I've skimmed it.

10 DR. BYRON WILLIAMS: Okay, we'll come  
11 back to that.

12 Mr. Barnlund, if we can turn to tab 8  
13 of the Coalition's book of documents, and specifically  
14 page 134.

15 Sir -- sir, just to be clear, this is  
16 not an excerpt from a Board Order, this is an excerpt  
17 from a closing argument, being the closing arguments  
18 of a certain Mr. Williams; agreed?

19 MR. GREG BARNLUND: I understand that,  
20 yes.

21 DR. BYRON WILLIAMS: And sir, if I  
22 direct your attention back to lines 10 through 12 of  
23 this submission, that's fine. Right there, Kristin.  
24 Lines 9 through 13, excuse me.

25 You'll see there is a suggestion that

1 each functional area of Manitoba Hydro is separately  
2 addressing the prioritization process; would that be  
3 fair?

4 MR. GREG BARNLUND: I see that written  
5 there, yes.

6 DR. BYRON WILLIAMS: If we can turn to  
7 tab 9 and -- and specifically page 139.

8 Mr. Barnlund, this is now 2012 --  
9 January of 2012; agreed?

10 MR. GREG BARNLUND: Yes.

11 DR. BYRON WILLIAMS: And here we are  
12 back to the Public Utilities Board speaking in Order  
13 5-12?

14 MR. GREG BARNLUND: Yes.

15 DR. BYRON WILLIAMS: And you see the  
16 Board in 2012 expressing a concern that an asset  
17 condition study has been delayed.

18 Do you see that reference, sir?

19 MR. GREG BARNLUND: I do. And -- and,  
20 you know, it might be useful if I could also turn our  
21 attention to an Information Request that we had  
22 answered with respect to the chronology on this.

23 DR. BYRON WILLIAMS: And this is PUB-  
24 1-89, sir?

25 MR. GREG BARNLUND: First round 89 (a)

1 to (c), that's correct.

2                   And maybe I could just -- if it, you  
3 know, would assist the Board in understanding that  
4 there was a -- I think there was a number of  
5 developments that occurred since the issuance of the  
6 initial directive to Manitoba Hydro in terms of an  
7 asset condition study that -- that had a rule in terms  
8 of the timing of how these things have come to pass.

9                   And there was a fair bit of  
10 correspondence and communication back and forth  
11 between Manitoba Hydro and the Public Utilities Board  
12 through this timeframe. One (1) of the limiting  
13 factors that Manitoba Hydro encountered was the need  
14 to be do -- doing a new depreciation study that was  
15 going to be reflective of the introduction of  
16 international financial reporting standards.

17                   And that was a -- a complication, if  
18 you would, in terms of us being able to do some of the  
19 -- the study work that was being requested because a  
20 lot of it would flow along with the depreciation study  
21 itself.

22                   DR. BYRON WILLIAMS:    Mr. Barnlund,  
23 thank you for that. You're not suggesting, sir, that  
24 other utilities were not able to conduct asset  
25 condition assessments at the same time that they

1 undertook depreciation studies, are you, sir?

2 MR. GREG BARNLUND: Well, I would  
3 suggest you, Mr. -- or Dr. Williams, that many other  
4 utilities adopted US GAAP through that period of time,  
5 and likely didn't have the complications that Manitoba  
6 Hydro faced.

7 If you recall the discussions we've had  
8 with regards to IFRS, there was a number of delays and  
9 a number of changes in the schedule of IR -- IFRS's  
10 adoption -- or finalization and adoption that tended  
11 to complicate things, where other utilities that would  
12 be reporting under US GAAP would not face that same  
13 set of complications as did Manitoba Hydro.

14 DR. BYRON WILLIAMS: Mr. Barnlund, I  
15 wonder if you can go with me to tab 12 being an  
16 excerpt from -- of the Coalition book of documents  
17 being an excerpt from Order PUB 49/14, and  
18 specifically page 163 in the middle of that page.

19 MR. GREG BARNLUND: Yes, sir.

20 DR. BYRON WILLIAMS: Again, sir,  
21 you'll see a reference to directive 7 of Order 43/13  
22 requiring Manitoba Hydro to file an asset condition  
23 assessment no later than the filing of the next  
24 depreciation study; that will help continue the  
25 conversation, sir?

1 MR. GREG BARNLUND: Yes, I see that.

2 DR. BYRON WILLIAMS: Sir, move with  
3 me, if you would, to tab 13, specifically page 170(a).

4 MR. GREG BARNLUND: Yes, sir.

5 DR. BYRON WILLIAMS: And go down to  
6 the per -- just up the page a bit, that's perfect,  
7 Kristin.

8 Here you see the Board in Order 73/15  
9 on the fourth line articulating a concern that Hydro  
10 has not -- that it's -- excuse me, that it's not  
11 satisfied that Manitoba Hydro has adequately evaluated  
12 the long-term pacing and prioritization requirements,  
13 sir? Agreed?

14 MR. GREG BARNLUND: I see it written  
15 there, yes.

16 DR. BYRON WILLIAMS: And at the last  
17 three (3) lines of that same paragraph, you'll see the  
18 Board suggesting that it --

19 "It's acceptance of the increased  
20 sustaining capital spending during  
21 this GRA -- GRA should not be  
22 construed as an endorsement of  
23 Hydro's long-term sustaining capital  
24 plan."

25 Agreed?

1                   MR. GREG BARNLUND:    Yes, that --  
2   that's their finding, and -- and I think that it's  
3   important to reflect on where Manitoba Hydro found  
4   itself in 2015 with regards to migrating to -- to the  
5   work that Mr. Wortley has been testifying to in terms  
6   of how we're going to be transitioning to our new  
7   asset management and investment strategies and -- and  
8   -- and -- and program.

9                   So we were -- were -- we were sort of  
10   with one (1) foot in either camp here but -- at the  
11   time at this Order was written.

12                  DR. BYRON WILLIAMS:    With --

13                  MR. JOEL WORTLEY:    I think I could add  
14   that by no means has Manitoba Hydro been idle during  
15   this time and that asset management is often described  
16   as a journey and so it has to happen across many  
17   fronts in parallel, but also in sequence.

18                  And so when I think about the history  
19   of Manitoba Hydro and the history of asset management  
20   at Hydro -- at Manitoba Hydro there have been many --  
21   many steps made, many practices improved and to bring  
22   up page 11 of the UMS report appendix 5.1 from the  
23   General Rate Application, there's a convenient little  
24   graphic here that I -- I think will help understand a  
25   little bit.

1                   Areas that Manitoba Hydro has made  
2 improvements in and areas where improvements are still  
3 to come. And so it's a little bit complicated. I --  
4 I apologize for that. But if you think about the  
5 latter I showed in direct evidence where the customer  
6 drives from the top, influences what the objectives of  
7 the company need to be, and so on down to a particular  
8 asset decisions, the customer sits at the top left  
9 side of this diagram. It influences company strategy.  
10 That company's strategy drives the business objectives  
11 which turn into an asset management policy and  
12 strategy you can see in the centre -- top centre.  
13 That drives down into asset management objectives and  
14 targets and into the development of asset management  
15 plans, the bottom row middle.

16                   Those plans affect what spendings can  
17 occur in Opex, or operating and maintenance and Capex,  
18 capital expenditures. Capital expenditures are  
19 optimized and then you can see on the far right side  
20 coming back, asset health indices are an input to this  
21 process.

22                   So you can see which of the boxes are -  
23 - are our darker coloured and are rated by UMS as  
24 being close to competent and which areas still  
25 require -- or still have larger gaps to be closed.

1 And so significant progress has been made here, and  
2 UMS does note that we compare favourably to North  
3 American industry as a whole.

4 So while we have not always been able  
5 to produce the reports that have been asked of us, we  
6 have not been idle in advancing our asset management  
7 journey.

8 DR. BYRON WILLIAMS: Mr. Wortley, UMS  
9 gave you a score of 1.5 in aggregate, with confidence  
10 being at level -- at Level 3; agreed?

11 MR. JOEL WORTLEY: That's correct.

12 DR. BYRON WILLIAMS: Mr. Barnlund,  
13 going to tab 15 of the Coalition book of documents  
14 being Order 59/16, and specifically at page 181.

15 Sir, this is 2016 now?

16 MR. GREG BARNLUND: Yes, sir.

17 DR. BYRON WILLIAMS: And you see as --  
18 going to the very last reference on page 181, you see  
19 the Public Utilities Board, again, requiring Hydro to  
20 file the complete asset condition assessment at the  
21 next General Rate Application?

22 MR. GREG BARNLUND: Yes, sir.

23 DR. BYRON WILLIAMS: Mr. Barnlund,  
24 it's always a pleasure, you're more than welcome to  
25 hang out for the rest of the day, subject to the

1 guidance of your legal counsel, in terms of the  
2 regulatory history, those are the questions that I  
3 intend to ask today. So I'll leave it to your --  
4 leave it to you -- to you to decide whether you wish  
5 to be excused or not.

6 Thank you, Mr. Barnlund.

7 MR. GREG BARNLUND: Thank you.

8 DR. BYRON WILLIAMS: We're going make  
9 a just a quick dive into the Boston Consulting  
10 PowerPoints, and specifically MFR-72, appendix 1.  
11 Boston Consulting Group, page 176.

12 Mr. Wortley, have you seen this slide  
13 before?

14 MR. JOEL WORTLEY: I have.

15 DR. BYRON WILLIAMS: Okay. And you  
16 see the characterization of the Boston Consulting  
17 Group as Manitoba Hydro having strong current  
18 reliability; agreed? You see that at the top, sir?  
19 The headline?

20 MR. JOEL WORTLEY: Yes.

21 DR. BYRON WILLIAMS: And sir, when we  
22 -- when we look at asset management -- management  
23 planning, clearly, reliability and safety are -- are  
24 very important considerations; agreed?

25 MR. JOEL WORTLEY: They are.

1 DR. BYRON WILLIAMS: Cost-  
2 effectiveness is -- is also an important  
3 considerations, sir?

4 MR. JOEL WORTLEY: I would agree.

5 DR. BYRON WILLIAMS: And ultimately,  
6 the impact on ratepayers, both in terms of reliability  
7 as well as in terms of costs, are -- is an equally  
8 important consideration, sir?

9 MR. JOEL WORTLEY: They're both  
10 important.

11 DR. BYRON WILLIAMS: Thank you. Now  
12 I'm going to ask to pull up Manitoba Hydro's response  
13 to Coalition 2-68, attachment 1.

14 MR. JOEL WORTLEY: Sir, were we done  
15 with BCG benchmarking there or were we going to  
16 explore that --

17 DR. BYRON WILLIAMS: I was moving on,  
18 sir.

19 MR. JOEL WORTLEY: Before we move on,  
20 can we just take a quick stop at -- MFR-72, page 340.

21 I just want to comment that on this  
22 slide we see that albeit that BCG found that Manitoba  
23 Hydro's reliability to be currently good, aging assets  
24 are looming as an issue.

25 And if we go to the next slide, the

1 benchmarks indicate spend has been similar or less  
2 than peers.

3                   And to the next one again, the system  
4 renewal capacity -- system renewal capital  
5 insufficient to replace aging assets. And so I just  
6 want to point out that with respect to benchmarking,  
7 these are interesting findings, but they're not  
8 sufficient with which to make any real decisions. You  
9 can't go increase the capital program simply because  
10 BCG found that potentially the dollars were less than  
11 someone else was spending. You got to go back to the  
12 reasons for the investments and make sure that each  
13 one is of value.

14                   So, similarly, albeit we find BCG's  
15 findings on the other aspects to be of interest, I do  
16 note that they're not particularly useful for driving  
17 direct action.

18                   DR. BYRON WILLIAMS:    And one (1) of  
19 those reasons, sir, would be that BCG in terms of its  
20 retainer was at Manitoba Hydro for basically three (3)  
21 months; agreed?

22                   MR. JOEL WORTLEY:    I couldn't comment  
23 on it.

24                   DR. BYRON WILLIAMS:    Okay. Let's go  
25 to Coalition 2-68, attachment 1. And let's go to page

1 1 just for a second, please, Kristin.

2                   Mr. Wortley, this is -- and whether  
3 this is to you or Mr. Turner. This is a report from  
4 the engineering services division generations op --  
5 operations covering a period between May and -- and  
6 January -- May 2015 and January 29.

7                   Would that be fair?

8                   MR. JOEL WORTLEY: Yes, it would.

9                   DR. BYRON WILLIAMS: And, Mr. Wortley,  
10 you'll recall from the UMS report of December 2016 a  
11 suggestion that most asset management efforts were  
12 focused on capital spending with minimal attention  
13 given to optimizing operations and maintenance.

14                   Do you recall that, sir?

15                   MR. JOEL WORTLEY: I do.

16                   DR. BYRON WILLIAMS: And if we turn to  
17 page 3 of this page -- go to page 2 just for one  
18 second, Kristin.

19                   This is a review of and an effort to  
20 develop a strategic maintenance plan for the general  
21 operations asset. Mr. Wortley, is that right?

22                   MR. JOEL WORTLEY: I think that's  
23 fair.

24                   DR. BYRON WILLIAMS: And going to page  
25 3 and focusing your attention on -- on the second

1 bullet, one (1) of the challenges identified was that  
2 the current condition monitoring of the equipment was  
3 not adequate.

4 Do you see that reference, sir?

5 MR. JOEL WORTLEY: I do.

6 DR. BYRON WILLIAMS: And were you head  
7 of generation at this time, sir?

8 MR. JOEL WORTLEY: I was.

9 DR. BYRON WILLIAMS: And also going to  
10 the third bullet:

11 "Information on the current condition  
12 of much equipment was also not  
13 adequate at that point in time."

14 Would that be fair, sir?

15 MR. JOEL WORTLEY: It would.

16 DR. BYRON WILLIAMS: Now, I'd like to  
17 go to Manitoba Hydro in -- in conducting this analysis  
18 did a survey of staff such as station manager, site  
19 supervisors and planners; agreed, sir?

20 MR. JOEL WORTLEY: Yes.

21 DR. BYRON WILLIAMS: And perhaps we  
22 can go to page 40.

23 And, Mr. Wortley, this was a survey in  
24 June of 2015. Has there been a survey subsequent to  
25 this, sir -- of this type of survey with -- with

1 regard to generation?

2 MR. JOEL WORTLEY: No, there is not.

3 DR. BYRON WILLIAMS: So, in essence,  
4 these are the -- the good folks in generation, the  
5 station manager, site supervisors and planners sharing  
6 with -- with Manitoba Hydro some of the major themes  
7 that they identified in terms of maintenance programs.

8 Would that be fair, sir?

9 MR. JOEL WORTLEY: Yes, this is  
10 ongoing and continuous improvement endeavour on behalf  
11 of those -- those staffers to look for opportunities  
12 for improvement and included in that was canvassing  
13 the -- the -- the station staff themselves to get a  
14 perspective from the shop floor.

15 DR. BYRON WILLIAMS: And certainly  
16 from the stops -- taught -- shop floor, frequent  
17 comment number 1 was the lack of quality maintenance  
18 procedures.

19 Do you see that, sir?

20 MR. JOEL WORTLEY: I do.

21 DR. BYRON WILLIAMS: And we'll go  
22 through some of those other themes, but you'll agree  
23 with me, those were the top five (5) frequent comments  
24 made by the front line staff?

25 MR. JOEL WORTLEY: Yes, I would.

1 DR. BYRON WILLIAMS: And if we can go  
2 down to theme 1, for a moment, Kristin, on this same  
3 page, being page 40.

4 And Mr. Wortley, you see in the first  
5 paragraph under Section 7.1, line 3, theme 1 being:

6 "Unfortunately, the work management  
7 measure rep -- measures reports do  
8 not have desired effect of looking  
9 for improvements with the suggestion  
10 in some iss -- areas there's  
11 workarounds created to make the  
12 numbers look good but not to improve  
13 the process."

14 Do you see that, sir?

15 MR. JOEL WORTLEY: I do. This is --  
16 one (1) of the reasons that these processes have been  
17 improved with our new enterprise asset management  
18 system, which is now enrolled out to all the  
19 generating stations --

20 MR. HAL TURNER: Correct.

21 MR. JOEL WORTLEY: -- and is -- is  
22 plugging many of these gaps.

23 DR. BYRON WILLIAMS: And there was,  
24 sir, at the time, a concern that administrative duties  
25 appear to be greatly increasing, and tool site -- time

1 for site maintenance staff is decreasing?

2 MR. JOEL WORTLEY: Yes, this is a real  
3 concern. Particularly as the industry gets more  
4 regulated with respect to safety and environment,  
5 there are more and more processes being added on site  
6 -- supervisory staff that takes them away from tool  
7 time.

8 DR. BYRON WILLIAMS: Sir, going to  
9 theme 3, in terms of the RCM Program and Philosophy,  
10 and directing your attention to just above (a) you'll  
11 see a common understand -- a suggestion that the  
12 common understanding of the current program seems to  
13 be lacking. Do you see that, sir?

14

15 (BRIEF PAUSE)

16

17 MR. JOEL WORTLEY: Yes, I do.

18 DR. BYRON WILLIAMS: And some specific  
19 areas of concerns, including no one is reviewing the  
20 results from the current maintenance updating failure  
21 modes and ensuring current task and intervals are  
22 appropriate, with the suggestion that the current  
23 program has not been reviewed since implementation  
24 greater than ten (10) years?

25 MR. JOEL WORTLEY: That's correct.

1 DR. BYRON WILLIAMS: Sir, we're not  
2 going to go through all of these, but let's go to  
3 theme 4 for a moment.

4

5 (BRIEF PAUSE)

6

7 DR. BYRON WILLIAMS: And sir, in  
8 particular with theme 4, I want to direct your  
9 attention to the last sentence, being a concern with  
10 the lack of predictive programs that was to be of --  
11 implemented to move towards more condition-based  
12 maintenance. Do you see that reference, sir?

13 MR. JOEL WORTLEY: I do.

14 DR. BYRON WILLIAMS: And sir, when was  
15 EAM implemented?

16 MR. JOEL WORTLEY: The EAM  
17 implementation is ongoing. It wrapped up in the  
18 generating stations this year, I believe.

19 MR. HAL TURNER: Correct. The last  
20 generating station was put in in November.

21 MR. JOEL WORTLEY: And is --

22 MR. HAL TURNER: November, yes.

23 MR. JOEL WORTLEY: -- currently being  
24 rolled out in -- in other parts of the Company.

25 DR. BYRON WILLIAMS: Okay. Thank you.

1 We'll move to theme 5 for a moment, page 42. And  
2 focusing on the first three (3) lines, sir, there's a  
3 suggestion that there's a lack of proper documented  
4 and controlled maintenance procedures, and currently,  
5 the quality we have ranges from poor to excellent, but  
6 no one is -- was reviewing the procedures for  
7 adequacy, consistency or continuous improvement.

8 Do you see that theme, sir?

9 MR. JOEL WORTLEY: I do.

10 DR. BYRON WILLIAMS: Theme 6, sir,  
11 suggests that there's been too many forced extensions  
12 -- going to the second line, sir, too many forced  
13 extensions in the past few you -- years, suggesting a  
14 planning issue?

15

16 (BRIEF PAUSE)

17

18 MR. HAL TURNER: That's correct.

19 DR. BYRON WILLIAMS: Theme 8, being  
20 page 44 of 111, go to page -- yeah. My -- I misspoke,  
21 page 43.

22 Going to the second line and down,  
23 there is a suggestion in June of 2015, that some basic  
24 condition monitoring tasks, as well as oil analysis,  
25 were put into the maintenance program, but the higher

1 technologies, such as vibration or air gap monitoring,  
2 have had limited progress, even though they are key  
3 components for measuring and monitoring machine  
4 health. Do you see that reference, sir?

5 MR. HAL TURNER: I do. I think these  
6 themes are reflective of the -- a previous -- a -- a  
7 system that we had in place, which is -- and so the  
8 implementation of EAM is going to address a lot of  
9 these things.

10 We've got other tools that we're  
11 putting in. So when we -- when we look at condition  
12 monitoring, in the past, it's been very manual, and so  
13 we're -- we're putting in a tool called Meridium to  
14 help automate these kind of things to make it more --  
15 less onerous, and so that we can get this kind of  
16 information processed easier, and we can use it to  
17 improve our maintenance practices.

18 DR. BYRON WILLIAMS: Thank you, sir.  
19 And to you, Mr. Wortley, you'll agree that a  
20 coordinated, optimized, and dev -- deliverable  
21 maintenance program is essential to ensure efficient  
22 use of operating funds, agreed?

23 MR. JOEL WORTLEY: I would certainly  
24 agree that maintenance is a critical part to managing  
25 assets for which maintenance can make a difference in

1 their performance or -- or life expectancy, yes.

2 DR. BYRON WILLIAMS: And it's also  
3 critical to improve operations and maintenance  
4 performance, agreed?

5 MR. JOEL WORTLEY: Sorry, maybe you  
6 could state the whole -- restate the whole question,  
7 please?

8 DR. BYRON WILLIAMS: Sir, I'll suggest  
9 to you that a coordinated, optimized, and deliverable  
10 maintenance program is essential to improve operations  
11 and maintenance performance, agreed?

12 MR. JOEL WORTLEY: Yes, I would agree  
13 with that.

14 DR. BYRON WILLIAMS: And sir --

15 MR. HAL TURNER: Actually, I'd just  
16 like to point out, I -- I agree it will help improve  
17 our operation and maintenance performance. But if you  
18 look back at the BCG benchmarking, you'll see that the  
19 generation, wholesales, operations, and administrative  
20 performance is actually quite good compared to our  
21 peers.

22 DR. BYRON WILLIAMS: And sir, as of  
23 January 16, 2016, and focusing on generation, would it  
24 be fair to describe the existing maintenance program  
25 activities as inconsistent, isolated, and not having

1 improved for a number of years?

2 MR. JOEL WORTLEY: Sorry, where are  
3 you quoting from, sir?

4 DR. BYRON WILLIAMS: Your strategic  
5 maintenance plan, Coalition 1-81, sir.

6 MR. JOEL WORTLEY: Can we bring that  
7 up?

8 DR. BYRON WILLIAMS: Yeah, we  
9 certainly can. It's page 13 of 86, Coalition-MH 1-  
10 181, first paragraph.

11

12 (BRIEF PAUSE)

13

14 MR. JOEL WORTLEY: And sorry, what was  
15 your question?

16 DR. BYRON WILLIAMS: As of January  
17 2016, you described the existing maintenance pro --  
18 program activities as inconsistent, isolated, and  
19 having not improved for a number of years. Would that  
20 be fair?

21 MR. HAL TURNER: I think that refers  
22 to the fact that the maintenance plans were created  
23 for each station, because the stations -- that's how  
24 we manage our assets at the station level, or that's  
25 how we managed our assets at the station level.

1                   And this is speaking to the fact that  
2 we want to take more of a asset class approach to it,  
3 so that -- I think that's the context of those  
4 comments.

5                   DR. BYRON WILLIAMS:    Thank you for  
6 that.  And if we can go to page 65 of 86 of this  
7 document, being Coalition 1-81, you'll see Mr. Turner  
8 -- Mor -- Mr. Wortley, a suggestion that a consultant  
9 review of the current maintenance plan must proceed to  
10 create standardized maintenance task templates by  
11 system or equipment type.  Do you see that reference?

12                  MR. HAL TURNER:    I do.

13                  DR. BYRON WILLIAMS:   And has this been  
14 completed, sir?

15                  MR. HAL TURNER:    We did hire a  
16 consultant.  Just one moment.

17

18                                       (BRIEF PAUSE)

19

20                  MR. HAL TURNER:    I we did hire a  
21 consultant to -- Hatch was the name of the consultant  
22 -- to look at our generators.  Unfortunately, we found  
23 that the product that they delivered did not meet our  
24 expectations, and the price was significantly higher  
25 than originally quoted.  So we are currently taking a

1 look at our cranes and our spillway. So this is as  
2 part of -- to support the Keeyask project. And so we  
3 are going to do this internally.

4 As part of our restructuring, we've  
5 been able to dedicate some staff to asset management  
6 initiatives, and we're going to do this internally, at  
7 least for these two (2) assets.

8 DR. BYRON WILLIAMS: And this task,  
9 sir, in terms of this report was described as a huge  
10 step towards consistency for the equipment  
11 maintenance? Do you see that, sir?

12 MR. HAL TURNER: Yes. We want to be  
13 more consistent than we have, but keep in mind that  
14 our plants have been in service since the early 1900,  
15 or as late as 2012, so it won't be exactly the same  
16 everywhere. There will be some similarities, and --  
17 and sharing of best practice, but it will not be 100  
18 percent consistent across every station.

19 DR. BYRON WILLIAMS: Now, am I correct  
20 in suggesting to you that as part of Hatch's original  
21 scope of work, the task of completing this template  
22 was to be completed by the 29th of December, 2017?

23 MR. HAL TURNER: One moment.

24

25

(BRIEF PAUSE)

1 MR. HAL TURNER: I'm sorry, can you  
2 repeat that date again? Did you say December 2017?

3 DR. BYRON WILLIAMS: Yeah.

4 MR. HAL TURNER: I -- I think it was  
5 December 2016, and then it ext -- ended -- ended up  
6 getting extended until about March of 2017.

7 DR. BYRON WILLIAMS: Okay. And that  
8 task ultimately wasn't completed and has now been  
9 assigned to internal staff? Is that right?

10

11 (BRIEF PAUSE)

12

13 MR. HAL TURNER: So the consultant was  
14 looking at generators, as I mentioned, and they  
15 started with the generators at the Grand Rapids  
16 Generating Station, and the cost of their exercise  
17 significantly exceeded or was trending to  
18 significantly exceed what they had originally told us  
19 the entire study would cost. So we stopped the  
20 generator study, and we are doing an internal review,  
21 but not of generators, of powerhouse cranes and  
22 spillways.

23 DR. BYRON WILLIAMS: Thanks. I'll be  
24 leaving in the generation maintenance issue, and I  
25 just want to have -- deal with some common -- what I

1 hope are common definitions with Manitoba -- Manitoba  
2 Hydro.

3                   And again, Mr. Wortley or -- or  
4 otherwise, but in terms of run to failure, is that  
5 essentially when assets are run to reach physical end-  
6 of-life conditions, with no proactive asset  
7 replacement management strategies conducted?

8                   Would that be fair?

9                   MR. JOEL WORTLEY:    Yeah.    Run to  
10 failure is -- is used in the context where the  
11 consequence of an asset failing in service is  
12 tolerable, and so it is -- it is allowed to  
13 deteriorate to a point where it no longer meets its  
14 function, whatever that happens to be, before being  
15 replaced.

16                  DR. BYRON WILLIAMS:   And would you  
17 agree that economic end of life, as used in asset  
18 management, is the threshold when the asset ceases to  
19 be the lowest cost alternative to performing a  
20 particular function at a particular expected  
21 competence -- competency bundle of quality, safety and  
22 reliability?

23

24

(BRIEF PAUSE)

25

1 MR. JOEL WORTLEY: Sorry, could you  
2 repeat, please?

3 DR. BYRON WILLIAMS: Mr. Wortley, I'll  
4 do my best. As used in asset management, economic end  
5 of life is the threshold when the asset ceases to be  
6 the lowest cost alternative to performing --  
7 performing a particular function at a particular  
8 expected competency?

9 MR. JOEL WORTLEY: I think that's  
10 reasonable.

11 DR. BYRON WILLIAMS: Theoretically,  
12 that's when you would want to replace an asset,  
13 because it costs you more to keep it than to replace  
14 it, agreed?

15 MR. JOEL WORTLEY: Theoretically, yes.  
16 In -- in practical application, it becomes a flag  
17 where -- where you should go make a deeper dive. So  
18 if the indication is that you're approaching economic  
19 end of life, that's the right time to go have a closer  
20 look at the asset, evaluate its particular -- you have  
21 to understand that economic end of life comes as a  
22 function of degradation and degradation or an asset  
23 health indices is an assessment of the average health  
24 of the asset.

25 So it doesn't tell you particularly how

1 that asset's going to fail, if it's just going to  
2 continue to degrade in terms of not to be able to turn  
3 as fast, or if it's going blow up, or what -- what  
4 actually is going to happen to this asset. So before  
5 you can make a decision, as to whether to intervene or  
6 not, you need to take a closer look at what are the  
7 failure modes tied to this particular asset, what is  
8 happening that its condition score has gone down to  
9 the point that it appears to be at economic end-of-  
10 life, do I really need to intervene now, what -- what  
11 risks do I carry by leaving it in service?

12                   So, economic end-of-life is helpful in  
13 terms of knowing where to look, but it's not  
14 definitive in knowing how to act. Or how to react.

15                   DR. BYRON WILLIAMS:   And, sir, would  
16 it be fair to say that definitions of economic end-of-  
17 life change over time as utilities use new processes  
18 or equipment, which makes replacement or maintenance  
19 more cost-effective? Or the calculation, rather than  
20 the definition, sir.

21                   MR. JOEL WORTLEY:   The inputs  
22 certainly change.

23                   DR. BYRON WILLIAMS:   Fair enough. And  
24 that's why, sir, asset management, as you aim to  
25 practice it, is a comprehend -- comprehensive feedback

1 loop of theory and practice. Agreed?

2 MR. JOEL WORTLEY: Yeah. One of the  
3 great challenges we have with asset management is  
4 definition, so I'm -- I'm glad that we're -- we're  
5 clearing some of that up. It is very difficult or  
6 challenging in that we all tend to use the same words  
7 and mean slightly different things. It's important --  
8 and this sounds almost ridiculous but it's true --  
9 there's a marked difference between asset management  
10 and managing assets.

11 Managing assets is about making  
12 particular decisions about an asset, in terms of how  
13 to operate it, and how to maintain it, when to  
14 intervene.

15 Asset management is the coordinated  
16 activities of an organization to realize value from  
17 its assets. So it's that -- that ladder that I showed  
18 again in direct leading from the customer, in terms of  
19 an objective, right down to day-to-day asset decisions  
20 at the bottom of the scale, and making sure that these  
21 things are all in alignment.

22 DR. BYRON WILLIAMS: Okay. Thank you.  
23 Sir, hopefully this will be a quicker question.

24 System Average Interruption Duration,  
25 or SAIDI, measures the average outage duration

1 experienced by customers. Agreed?

2 MR. JOEL WORTLEY: Agreed.

3 DR. BYRON WILLIAMS: And System  
4 Average Interruption Frequency, or SAIFI, measures the  
5 average number of interruptions that customers have  
6 experienced. Agreed?

7 MR. JOEL WORTLEY: Yes.

8 DR. BYRON WILLIAMS: And for  
9 transmission and distribution, those are key long-term  
10 performance metrics. Agreed?

11 MR. GERALD NEUFELD: I would say that  
12 for transmission that would not be the case. And --  
13 and the reason for --

14 DR. BYRON WILLIAMS: Simply for  
15 distribution, sir?

16 MR. GERALD NEUFELD: I'm sorry?

17 DR. BYRON WILLIAMS: Okay, go ahead.

18 MR. GERALD NEUFELD: And -- and the  
19 reason that the TSAIFI and TSAIDI are not the  
20 prominent metrics, is that -- that doesn't mean that  
21 there is an outage. What -- what a TSAIFI outage  
22 means is that there's a node which has lost one of its  
23 supplies. But it could have alternate supplies, so  
24 the power is still flowing.

25 DR. BYRON WILLIAMS: So -- thank you.

1 So, in essence, Hydro's agreeing that it is for tra --  
2 for distribution? You're nodding your head, Sir?

3 MR. JOEL WORTLEY: Yes. Yes.

4 DR. BYRON WILLIAMS: Mr. Wortley,  
5 without asking you to elaborate on the corporate value  
6 framework, I'll ask you to agree that it was not used  
7 to determine which project should be executed within  
8 capital expenditure forecast 2016. Agreed?

9 MR. JOEL WORTLEY: That is correct.  
10 The corporate value framework is currently being  
11 piloted.

12 DR. BYRON WILLIAMS: And it would be  
13 fair to say that the capital and operating budgets in  
14 the current filing were not developed with -- using  
15 the new asset management methodologies?

16 MR. JOEL WORTLEY: Yes. As I  
17 described in -- again, in my direct evidence, that the  
18 investments in the test years are programmed by our  
19 operating and subject matter experts, based on risk  
20 assessments, in view of keeping the system operating  
21 in a safe and reliable manner in the short-term. And  
22 the longer-term forecasts are anchored in historic  
23 spending trends shaped around the best information  
24 we've got as to where things are going in the future.

25 MR. HAL TURNER: I need a course on

1 how to use this mic. I'm sorry.

2 I would like to add -- so the -- the  
3 CEF16 is a snapshot in time of the capital -- the  
4 Corporation's capital plan. And, as my colleague Mr.  
5 Wortley pointed out, generation wholesale is piloting  
6 the use of the corporate value framework. And we did  
7 use the corporate value framework to identify scope  
8 and set the timing of projects that do actually appear  
9 in the test years; they're just not necessarily  
10 documented in CEF16.

11 DR. BYRON WILLIAMS: So, just so I am  
12 clear, not transmission, not distribution?

13 MR. GERALD NEUFELD: Transmission did  
14 -- is not yet a position to be using the corporate  
15 value framework as a prioritization tool. However, we  
16 have a dif -- a -- a different tool, a prioritization  
17 tool, that we -- we established back in the early  
18 2000s, which has been enhanced on a few occasions.  
19 And that's -- that's the -- the tool we use to  
20 prioritize for transmission projects.

21 MR. CHUCK STEELE: You know, I can  
22 comment on distribution. Generally our -- our asset  
23 replacement strategies are based around replacing  
24 assets that no longer meet our customers'  
25 requirements.

1 DR. BYRON WILLIAMS: Mr. Wortley, in -  
2 - and you adverted to this in my -- your conversation  
3 with my Learner Friend Mr. Peters.

4 In the terms -- in terms of determining  
5 the optimum design of its portfolio, Manitoba Hydro  
6 does not forecast or project SAIDI or SAIFI values.  
7 Agreed?

8 MR. JOEL WORTLEY: Agreed.

9 DR. BYRON WILLIAMS: And, it would be  
10 fair to say, more general -- generally, that Hydro  
11 does not forecast reliability improvements associated  
12 with the natural -- capital and operating expenditures  
13 related to specific projects or programs. Agreed?

14 MR. GERALD NEUFELD: I -- I would say  
15 that that's not true for transmission. We -- we have  
16 deve -- developed some tools that use a probability of  
17 failure in the analysis, and that's one of the inputs  
18 for the prioritization.

19 DR. BYRON WILLIAMS: You're referring  
20 to the System Reliability Risk Model, sir?

21 MR. GERALD NEUFELD: Yes.

22 MR. CHUCK STEELE: You know, if -- if  
23 I may, I'd like to put some context around SAIDI and  
24 SAIFI, and how it's utilized at Manitoba Hydro.

25 Certainly, my understanding is that our

1 counterparts at CEA have either advanced metering  
2 infrastructure or advanced remote monitoring, whereas  
3 Manitoba Hydro does not. So our SAIDI and SAIFI  
4 calculations are done on a relatively coarse methodol  
5 -- methodology compared to our counterparts.

6           So our expectation is that if we go  
7 down the path of adding more sophistication to be able  
8 to record SAIDI and SAIFI with more -- more accuracy,  
9 our -- our consultants tell us that the -- our  
10 reliability of figures will actually become worse once  
11 we have a more accurate accounting for them.

12           So when we're -- when we're comparing  
13 SAIDI and SAIFI, I think it's important to recognize,  
14 against our peers, that our method of calculating it  
15 is a more coarse method than what our peers would  
16 have.

17           DR. BYRON WILLIAMS: I don't want to  
18 follow this too far, sir, but just so I understand it,  
19 are you indicating that if the method of calculation  
20 improves, the results will be worsened?

21           MR. CHUCK STEELE: Well, to give an  
22 example, our -- our SAIDI calculation starts when a  
23 customer phones our contact centre and tells us that  
24 they're out of power, in -- in many circumstances. So  
25 that's when the clock starts ticking. In another

1 utility they might know the instant that customer does  
2 not have power.

3                   Yeah, also, from a frequency  
4 perspective, we don't capture short duration outages.  
5 We don't have that sophistication. So if someone has  
6 a, you know, a three (3) second outage in their home  
7 that, through our system, we're able to reconnect, but  
8 we might not be aware that they were out for that --  
9 for that duration you.

10                   DR. BYRON WILLIAMS: Thank you. Thank  
11 you. Mr. Wortley, in the current opti -- optimization  
12 process, it would be fair to say that capital  
13 investment scenario analysis is not part of it?

14                   And -- and if you need more precision,  
15 sir, I'm suggesting to you that Manitoba Hydro, for  
16 the test years, did not explicitly evaluate  
17 alternative investments sary -- scenarios for the test  
18 years to determine the relefe -- relative performance  
19 outcomes for different levels of investment. Agreed?

20                   MR. JOEL WORTLEY: Yeah, that --  
21 that's -- that is -- I would agree with that. One (1)  
22 of the capabilities of the corporate -- or Capital  
23 Portfolio Management Program that we are currently  
24 deploying, is to allow scenario analysis.

25                   DR. BYRON WILLIAMS: Mr. Chair, I'm

1 not sure if the Board wishes or desires a -- a quick  
2 break this afternoon. If so, I'm going to move into a  
3 related area, but --

4 THE CHAIRPERSON: Well, we can -- we  
5 can either take it now or in a half an hour. How long  
6 is in the next area you're going into?

7 DR. BYRON WILLIAMS: I'm gonna say it  
8 will take forty-five (45) minutes to an hour.

9 THE CHAIRPERSON: Then let's take a -  
10 - we'll take a fifteen (15) minute break now.

11

12 --- Upon recessing at 3:29 p.m.

13 --- Upon resuming at 3:48 p.m.

14

15 THE CHAIRPERSON: Dr. Williams...?

16

17 CONTINUED BY DR. BYRON WILLIAMS:

18 DR. BYRON WILLIAMS: Kristin, if you  
19 can turn to Coalition 32-1, page 5.

20 Mr. Wortley, you'll recall just before  
21 the break a bit of a discussion about capital scenario  
22 analysis. Do you remember that, sir?

23 MR. JOEL WORTLEY: I do.

24 DR. BYRON WILLIAMS: And the  
25 indication was that that is something that Manitoba

1 Hydro aspires to as it moves forward in the next three  
2 (3) to five (5) years in terms of its capital asset  
3 management portfolio?

4 MR. JOEL WORTLEY: That's correct.  
5 We're laying the groundwork as we speak.

6 DR. BYRON WILLIAMS: And you're aware  
7 as well, sir, that other utilities currently use  
8 capital analysis -- excuse me, capital scenario  
9 analysis to consider impacts on projected performance  
10 metrics of different capital investments scenarios;  
11 agreed?

12 MR. JOEL WORTLEY: Yep.

13 DR. BYRON WILLIAMS: And you're aware  
14 as well that other utilities use capital scenario  
15 analysis to consider within a specific portfolio  
16 optimized investments aimed at achieving certain  
17 performance metrics; agreed?

18 MR. JOEL WORTLEY: That sounds  
19 reasonable.

20 DR. BYRON WILLIAMS: That your  
21 understanding, sir?

22 MR. JOEL WORTLEY: Yep.

23 DR. BYRON WILLIAMS: And, sir,  
24 recognizing that -- in the course of this hearing  
25 you've had the opportunity to review the evidence of

1 METSCO written on behalf of the Consumers Coalition?

2 You've reviewed that, sir?

3 MR. JOEL WORTLEY: I have.

4 DR. BYRON WILLIAMS: And recognizing  
5 that what is before us is not the METSCO report filed  
6 for the purposes of this hearing, but you're aware --  
7 and you assisted as well, sir, in developing the  
8 Corporation's rebuttal to METSCO's evidence?

9 MR. JOEL WORTLEY: I did, yes.

10 DR. BYRON WILLIAMS: And you're aware,  
11 sir, that in the course of the METSCO evidence in the  
12 course of this hearing they cited a number of good  
13 practice examples of -- of different utilities in  
14 terms of capital asset management.

15 You're nodding your head?

16 MR. JOEL WORTLEY: Yep.

17 DR. BYRON WILLIAMS: And certainly,  
18 sir, you were made aware by your -- that some of those  
19 good practice examples might be referred to in the  
20 cross-examination of the Coalition; agreed?

21 As set out in this book of documents?

22 MR. JOEL WORTLEY: yes.

23 DR. BYRON WILLIAMS: And so, sir, have  
24 you reviewed at tabs 1 through 6 of the Coalition book  
25 of documents; you or your team?

1                   MR. JOEL WORTLEY:    I've -- would say  
2 I've reviewed them far enough to have a general  
3 understanding.

4                   DR. BYRON WILLIAMS:    Okay.  And, sir,  
5 recognize as we go through these questions that to a  
6 significant degree we're trying to use these for  
7 illustrative purposes and not to delve deep into your  
8 personal knowledge of EPCOR or other utilities.

9                   Do you understand that, sir?

10                  MR. JOEL WORTLEY:    Yes, it would be a  
11 short dive.

12                  DR. BYRON WILLIAMS:    And so, sir,  
13 let's -- let's walk our way through this and -- and  
14 just speaking of a short dive, in terms EPCOR, E-P-C-  
15 O-R, which I do not believe is an acronym but it's a  
16 brand, that, in essence, is Edmonton's power and water  
17 utilities, sir?

18                  MR. JOEL WORTLEY:    If -- if you say  
19 so.

20                  DR. BYRON WILLIAMS:    Okay, if you  
21 don't know that's fine.  Sir, I want to draw you  
22 specifically -- before we get into the -- this  
23 document specifically, when we look at outage events,  
24 would it be fair to say that while some are within the  
25 control of the Corporation, there are others that

1 cannot be mitigated, or can only be partially  
2 mitigated.

3                   Would that be fair, sir?

4                   MR. CHUCK STEELE:    Yes, I would say  
5 that's fair.

6                   DR. BYRON WILLIAMS:   Weather events  
7 would be one (1) of those where it's difficult to  
8 fully mitigate?

9                   MR. CHUCK STEELE:    Yeah, cert --  
10 certainly there can be hardened designs of portions of  
11 the distribution network that would be better suited  
12 to withstand certain weather events but, yeah,  
13 generally speaking, a lot of those events are out of  
14 our control.

15                   DR. BYRON WILLIAMS:   And so when we  
16 look at causes of outages potential items such as  
17 scheduled outages may be elements that may be more  
18 controllable by the Utility; agreed?

19                   MR. CHUCK STEELE:    Yes, agreed.

20                   DR. BYRON WILLIAMS:   And defective  
21 equipment, at least to a certain degree, is a  
22 reflection of the -- the choices that a utility makes  
23 in terms of its investment decisions; would that be  
24 fair?

25                   MR. CHUCK STEELE:    Yep.  Yes, it would

1 be fair.

2 DR. BYRON WILLIAMS: So in terms of  
3 outage causes, at least, those two (2) would be  
4 examples of ones that are more controllable; agreed?

5 MR. CHUCK STEELE: Yes and I would  
6 argue that I could add to that list: vegetation  
7 management. I think equal to defective equipment a  
8 large percentage of our outages are due to tree  
9 contacts for argument.

10 DR. BYRON WILLIAMS: Okay. So the big  
11 three (3) in terms of controllable would be  
12 vegetative management, defective equipment and  
13 scheduled outages, from the Corporation's perspective?

14 MR. CHUCK STEELE: I think that would  
15 be a fair summary.

16 DR. BYRON WILLIAMS: And I wonder if  
17 we can turn to tab 1, page 10 of Coalition 32-1. And  
18 scroll down the page a bit more. Thank you.

19 At a high level, and primarily for  
20 illustrative purposes, what the METSCO analysis in  
21 this document is attempting to do is to examine the  
22 consequences of different spending and investment  
23 decisions on key performance metrics.

24 Would that be fair?

25 MR. CHUCK STEELE: Yes.

1 DR. BYRON WILLIAMS: And in essence,  
2 if we focus on the third paragraph before us, one (1)  
3 of the options, one could examine in a scenario, is  
4 expenditure level designed to keep metrics at -- at  
5 the current level that they -- they are.

6 Would that be fair?

7 MR. CHUCK STEELE: Can -- can you  
8 maybe point to that a little bit closer.

9 DR. BYRON WILLIAMS: I'm directing  
10 your attention to the last sentence on the third  
11 paragraph suggesting mid-point scenarios contemplate  
12 maintaining SAIDI and SAIFI at recent levels.

13 MR. CHUCK STEELE: To the extent  
14 they're utilizing SAIDI and SAIFI as their performance  
15 benchmarks or metrics, sure, I agree.

16 DR. BYRON WILLIAMS: Okay.

17 MR. CHUCK STEELE: That that's what  
18 that paragraph says.

19 DR. BYRON WILLIAMS: And additionally,  
20 one could look, directing your attention to the fifth  
21 line of this same paragraph, at scenarios targeting  
22 improvement in either SAIDI or SAIFI in terms of  
23 investment decisions. Agreed?

24 MR. CHUCK STEELE: Agreed. Can I add  
25 some commentary about --

1 DR. BYRON WILLIAMS: You can, indeed,  
2 sir.

3 MR. CHUCK STEELE: Our -- Manitoba  
4 Hydro's investment drivers from a distribution  
5 perspective, we don't quantitatively target SAIDI or  
6 SAIFI whether it's to maintain or improve.

7 Our -- our investment drivers are very  
8 clearly to -- to meet our customer connection  
9 requirements; to ensure that the system is capable of  
10 supplying existing; and a reasonable amount of future  
11 customer connections. Then finally, we look at our  
12 system renewal spend based on condition assessments.

13 So -- so we don't target system renewal  
14 investments on changes or -- or maintaining SAIDI or  
15 SAIFI numbers, we -- we base our placements on system  
16 assessments -- or condition assessments of those  
17 assets.

18 DR. BYRON WILLIAMS: That's how you do  
19 it currently, sir, but --

20 MR. CHUCK STEELE: That is correct.

21 DR. BYRON WILLIAMS: -- you're not --  
22 yes, you are not suggesting --

23 MR. CHUCK STEELE: Our -- our goal  
24 certain -- certainly, our goal is to increase our  
25 understanding of our system and to have better

1 analytics going for.

2 DR. BYRON WILLIAMS: And taking that  
3 goal further, sir, it is to be able to make investment  
4 dec -- decisions based on an informed understanding of  
5 what the potential outcomes may be in a variety of key  
6 metrics, including SAIDI and SAIFI; agreed?

7 MR. CHUCK STEELE: I would agree with  
8 that, with the -- maybe added caveat that in all these  
9 instances the -- the ends have to justify the means  
10 and that if we're going -- as we walk this path as we  
11 come down and get closer to being able to -- to build  
12 the models to make the predictive analyses, we want to  
13 make sure that the effort involved in making the  
14 prediction pays off in the decision that is affected  
15 by the prediction.

16 And so if we -- if we see that an  
17 unreasonable amount of investment in time and -- and  
18 data collection and analysis is going to be required  
19 to which they'll be very little impact to the  
20 decision, then we're -- we're not going to do it.  
21 It's got to make sense and it's got to pay back which  
22 is a -- a fundamental tenet of asset management. All  
23 of your activities have to carry value.

24 So if and when we get to a point where  
25 predicting outcomes on this scale is of value in the

1 decision-making, yes, we will do it.

2 DR. BYRON WILLIAMS: And just to  
3 finish what this analysis examines, we've already  
4 talked about looking at maintaining the SAI -- the  
5 performance metrics that are -- at -- at recent  
6 levels; agreed?

7 MR. CHUCK STEELE: With respect to  
8 EPCOR?

9 DR. BYRON WILLIAMS: Yeah.

10 MR. CHUCK STEELE: Yes.

11 DR. BYRON WILLIAMS: We've also talked  
12 about improving performance metrics; agreed?

13 MR. CHUCK STEELE: Again with respect  
14 of EPCOR, yes.

15 DR. BYRON WILLIAMS: Yes. And let's  
16 premise all this discussion on this is what can be  
17 done in terms of forward-looking practice.

18 Is that fine with you, sir?

19 MR. CHUCK STEELE: That's fine.

20 DR. BYRON WILLIAMS: And as Mr. Peters  
21 -- My Learned Friend Mr. Peters discussed with Mr.  
22 Wortley earlier, you could also target your investment  
23 scenarios, as EPCOR did here, in terms of considering  
24 lowering your performance metrics by 10 percent;  
25 agreed?

1                   MR. CHUCK STEELE:    You know I -- I did  
2 skim through the report.  I did not look through it  
3 very closely.  But my understanding was METSCO looked  
4 at EPCOR in terms of trends and whether you could have  
5 them improving or decreasing reliability metrics but -  
6 - but it wasn't specific as to targeting, you know,  
7 quantitative numbers so I'm not sure if that's what  
8 you're -- you're asking but...

9                   But certainly my impression it was more  
10 of a trend that they -- they could target improving  
11 reliability or de -- decreasing reliability.

12                  DR. BYRON WILLIAMS:   And as you'll see  
13 on the third last line of the paragraph before you,  
14 sir, even investigating scenarios aiming at a managed  
15 10 percent degradation of both metrics.

16                  Do you see that, sir?

17                  MR. CHUCK STEELE:    Yep.  Yes.

18                  DR. BYRON WILLIAMS:   And turning to  
19 page 11 of this document, recognizing this is EPCOR  
20 practice, sir, I'll suggest to you that on pages 11  
21 and 12 are eight (8) different scenarios considered by  
22 EPCOR.

23                  Will you agree with that, sir?

24                  MR. CHUCK STEELE:    Yes, I count -- I  
25 count eight (8).

1 DR. BYRON WILLIAMS: And again, sir,  
2 using run to failure as the base case, they examine  
3 the outcomes of investment decisions aimed at  
4 improving performance, keeping performance stable or  
5 having a 10 percent degradation in performance;  
6 agreed?

7 MR. CHUCK STEELE: Agreed.

8 DR. BYRON WILLIAMS: And if we turn  
9 to, sir, page 13 of this document focusing, you'll  
10 agree with me, sir, that the -- what this type of  
11 material would enable a decision-maker to consider are  
12 the outcomes of a family of investment decisions as  
13 they affect reliability metrics; agreed?

14 MR. CHUCK STEELE: You know, agreed.  
15 I guess I would add the caveat that I don't know that  
16 METSCO wrote this report on EPCOR'S -- EPCOR'S behalf  
17 but I don't know to the level that EPCOR accepted the  
18 recommendations or the -- the findings of this report.

19 DR. BYRON WILLIAMS: And sir, I'm not  
20 asking you to comment on the recommendations --

21 MR. CHUCK STEELE: But certainly, the  
22 -- the -- METSCO does present some curves that purport  
23 to do exactly what you say.

24 DR. BYRON WILLIAMS: And going to the  
25 next page, sir, being page 14, you see a contemplation

1 of the impacts of different investment scenarios on  
2 duration interruptions being figure E-6.

3 Do you see that, sir?

4 MR. CHUCK STEELE: Yes.

5 DR. BYRON WILLIAMS: And going to the  
6 next page, being 15, you see similarly scenarios  
7 contemplating the consequences of different investment  
8 paths on frequency interruptions also known as safety;  
9 agreed, sir?

10 MR. CHUCK STEELE: Agreed.

11 DR. BYRON WILLIAMS: Now, Mr. Steele,  
12 if we can go to page 21 of the tab 1. And if --  
13 you'll see there, sir, the eight (8) scenarios  
14 presented by METSCO in this document, sir?

15 MR. CHUCK STEELE: Yes.

16 DR. BYRON WILLIAMS: And if we scroll  
17 down to the figure, right there is perfect. Thank  
18 you.

19 And what is presented here, sir, is in  
20 terms of specific -- and again for illustrative  
21 purposes in -- in -- in terms of specific investment  
22 choices, the relative cost of different investment  
23 choices in achieving systemwide reduction of key  
24 performance metrics.

25 Do you see that, sir?

1 MR. CHUCK STEELE: Yes, I see it.

2 DR. BYRON WILLIAMS: And this one on  
3 this page, being page 21, cues up in essence an  
4 optimal investment order for improving system SAIDI;  
5 agreed?

6 You'll see at that the top -- you see  
7 that sir? You're nodding your head.

8 MR. CHUCK STEELE: You know, I -- I  
9 see it. I'm not sure if I understand that it's --  
10 it's prioritized by -- in terms of value. Is that  
11 what you're suggesting or...?

12 DR. BYRON WILLIAMS: Yes, and I'll  
13 direct your attention to the paragraph immediately  
14 above that, sir.

15 I'll suggest to you it's a cost-benefit  
16 analysis of each of the various investment options  
17 when looking to impact reliability performance, sir.

18 Do you see that?

19 MR. CHUCK STEELE: Yes. It's just not  
20 clear to me whether it's a -- the impact on total  
21 performance by each -- each of the vertical scale, or  
22 if it's -- or if it's done in the order of -- of value  
23 --

24 DR. BYRON WILLIAMS: Of value. And  
25 sir, in essence, what you're seeing from that

1 paragraph above the figure is that --

2 MR. CHUCK STEELE: Okay, optimal  
3 investment. Sorry when I read it on my piece of paper  
4 the type is too small, but if I look on the screen  
5 it's -- it's legible.

6 DR. BYRON WILLIAMS: It's an  
7 optimization exercise, sir?

8 MR. CHUCK STEELE: That's fine.

9 DR. BYRON WILLIAMS: Okay, so I think  
10 I hear you --

11 MR. CHUCK STEELE: Yes, I agree. I  
12 agree, yes.

13 DR. BYRON WILLIAMS: Okay. And if we  
14 go to the next page, being page 22, we see as well for  
15 system frequency an optimiz -- optimal investment cue  
16 as well.

17 Agreed, sir?

18 MR. CHUCK STEELE: Yes.

19 DR. BYRON WILLIAMS: And recognizing  
20 Mr. Wortley's advice about wanting to be cognizant of  
21 the cost-benefit of these exercises, this -- this is  
22 that what some utilities in Canada, New Zealand,  
23 United Kingdom are doing in -- in -- in evaluating  
24 different scenarios and in optimizing their  
25 portfolios, as measured against projections of future

1 performance. Agreed?

2 MR. CHUCK STEELE: You know, I suppose  
3 that's the case to the extent that those utilities  
4 would target SAIDI and SAIFI as having that value for  
5 the customers -- for their customers.

6 MR. JOEL WORTLEY: That -- that is the  
7 missing link here, right, is that they are targeting  
8 SAIDI and SAIFI but there's no measure of value in  
9 terms of what that really represents to the customer,  
10 and therefore, it's not enough information to make  
11 actual decisions on whether it's worth making the  
12 improvements.

13 Manitoba Hydro's corporate value  
14 framework includes customer impacts and by having it  
15 built in to the system for valuing our investments  
16 sets the stage such that when we are ready to do SAIDI  
17 and SAIFI projections we can actually tie that back to  
18 a customer value and make some real decisions with it.  
19

20 (BRIEF PAUSE)

21

22 DR. BYRON WILLIAMS: This same type of  
23 exercise, sir, with an input of customer value as well  
24 as reliability figures could be done for any good  
25 practice corporation; agreed?

1                   MR. JOEL WORTLEY:    With enough time  
2 and money you can do anything, yes.  There's  
3 definitely obviously a range of maturities to which we  
4 know that the Europeans and Australians are ahead of  
5 North Americans, and we know that certain North  
6 American industries -- or sorry, companies are further  
7 ahead than others.

8                   Manitoba Hydro's progressing and  
9 actively pursuing asset management improvements.  This  
10 is one that we will consider as we go forward.

11                   DR. BYRON WILLIAMS:   And certainly,  
12 sir, as it relates to the Board, based upon the  
13 conversation with Mr. Barnlund, you'll note that this  
14 is a conversation that has been going back at least a  
15 decade, agreed?

16                   MR. JOEL WORTLEY:    Agreed.

17                   DR. BYRON WILLIAMS:    If we can turn to  
18 Coalition Exhibit --

19                   MR. HAL TURNER:    Actually, I just  
20 wanted to add one (1) thing.  I -- I think it's  
21 important to note -- I think the -- the Board should  
22 take note that METSCO, your -- your Intervenor expert  
23 witness commanded Manitoba Hydro on how we try and  
24 take customer impact into the CVF.  We're not just  
25 basing it on a statistic.

1           As -- as Mr. Wortley pointed out, it's  
2 hard to know what point 1 and SAIDI or SAIFI is worth,  
3 but we take it a step further, and we try to  
4 understand how that's going to impact our customers so  
5 we can make the right investment decision.

6           DR. BYRON WILLIAMS:    This -- Mr.  
7 Turner, just so I'm clear -- actually, to Mr. Wortley,  
8 just so I'm clear, in terms of the CEF, the Capital  
9 Expenditure Forecast for 2016, for the portfolio, this  
10 type of analysis was not conducted, although we --  
11 we're -- we're aware of the -- the -- the trial with -  
12 - with --

13           MR. HAL TURNER:    I'm sorry, doc -- Dr.  
14 Williams, I thought we were talking about future  
15 state. I thought these exhibits were to talk about  
16 where we could go.

17           DR. BYRON WILLIAMS:   Mr. Turner, just  
18 in terms of your response, you were talking about what  
19 we're doing. So simply, I was trying to take it back  
20 to what was put into the Capital Expenditure Forecast.

21                           And I do apologize --

22           MR. HAL TURNER:    Right, no. Fair  
23 enough. You're right. We're -- we're -- where we  
24 want to take it is that we are -- we built into the  
25 corporate value framework the ability to quantify the

1 impact of the customer, and that's where we're headed.

2 DR. BYRON WILLIAMS: Okay. Mr.  
3 Wortley, this type of ability for the overall  
4 portfolio of generation distribution and transmission  
5 is currently not available to Manitoba Hydro? You're  
6 not able to do this right now?

7 MR. JOEL WORTLEY: It's not part of  
8 our regular practices, no.

9

10 (BRIEF PAUSE)

11

12 DR. BYRON WILLIAMS: If we can turn to  
13 Coalition Exhibit 32-1, Tab 5, and specifically the  
14 Toronto Hydro distribution system plan. You can pick  
15 page 75 for right now.

16

17 (BRIEF PAUSE)

18 DR. BYRON WILLIAMS: And Mr. Steele,  
19 I'll -- I'll come back to you in just a second, or to  
20 Mr. Wortley. I'm -- I'm agnostic on -- on who answers  
21 the questions.

22 But Mr. Wortley, you're aware -- or  
23 sorry, you indicated in your conversation with My  
24 Learned Friend Mr. Peters earlier today that to your  
25 knowledge, in terms of the CEF16, that Manitoba Hydro

1 had not undertaken stakeholder research specifically  
2 investigating preferences for a trade off between rate  
3 increase and reliability performance? Is that your  
4 recollection of that conversation?

5 MR. JOEL WORTLEY: Yes, that is  
6 correct.

7

8 (BRIEF PAUSE)

9

10 DR. BYRON WILLIAMS: And would it be  
11 fair to say that currently, Manitoba Hydro does not  
12 regularly calculate life cycle cost for asset  
13 management purposes?

14

15 (BRIEF PAUSE)

16

17 MR. HAL TURNER: We may not calculate  
18 them explicitly, but we do take them into  
19 consideration in our investment decisions. So for  
20 example, if we were buying a new turbine runner, we  
21 would communicate to the vendor what the efficiency of  
22 the runner was worth to us in monetary terms, and so  
23 they could use that to optimize their design. So if  
24 it made sense for them to do some more testing to  
25 fine-tune the efficiency of the turbine runner, they

1 could understand what that's worth to us and help us  
2 make the right investment decision.

3 So correct that we do not explicitly  
4 calculate the life cycle costs for the asset, but we  
5 do consider life cyc -- cycle cost implications in our  
6 investment decisions.

7 DR. BYRON WILLIAMS: And -- and let me  
8 --

9 MR. CHUCK STEELE: Sorry, if I could  
10 just add to that?

11 DR. BYRON WILLIAMS: Go ahead, Mr.  
12 Steele.

13 MR. CHUCK STEELE: I -- I believe when  
14 we order transformers, for example, or when we go out  
15 for tender for transformers and -- and other  
16 electrical equipment that might have losses inherent  
17 to them, we -- we do a calculation based on the value  
18 of those losses over the life cycle of -- of the  
19 asset.

20 DR. BYRON WILLIAMS: Thank you for  
21 those that clarifications. Would it be fair to say  
22 that the portfolio is not opti -- optimized based on  
23 life cycle cost?

24 MR. HAL TURNER: That's fair, but the  
25 -- when we will be optimizing, as we have been in

1 generation wholesale, it's not just based on  
2 economics. It also considers the safety of the  
3 public, of our staff, the environment. So it's not  
4 just an economic decision when we optimize. We try  
5 and look at all those factors.

6 MR. CHUCK STEELE: I -- I don't know  
7 that it's fair to conclude, as you suggest, because we  
8 -- at the end of the day, we may have an optimized  
9 portfolio based on all of the factors and the -- and  
10 the balances that Mr. Wortley often talks about that  
11 may, by default, be the best portfolio, from a life  
12 cycle cost as well.

13 DR. BYRON WILLIAMS: And Mr. --

14 MR. HAL TURNER: Sorry, I just wanted  
15 to add one (1) other point. I apologize.

16 When we're optimizing, we're optimizing  
17 at the portfolio level, so we're looking at all of our  
18 investments. So I'm talking from a generation  
19 perspective --

20 DR. BYRON WILLIAMS: And -- and you're  
21 talking -- you're not talking about the entire  
22 portfolio, just --

23 MR. HAL TURNER: I'm -- I'm just  
24 talking -- so, for example, in -- in generation  
25 wholesale, when we optimize. So we're looking at all

1 of our investment needs. So we may choose a solution  
2 that doesn't offer the lowest life cycle cost for a  
3 particular asset because it may free up, for example,  
4 some capital that we could invest in a different asset  
5 and bring overall greater value to Manitoba Hydro.

6                   So we don't deal with it on a  
7 investment by investment decision. We're -- part of  
8 the benefit of -- of the new capital portfolio  
9 management process and the corporate value framework  
10 is we're making our decisions at the portfolio level.  
11 And so we maximize value at the portfolio level, not  
12 necessarily at each individual investment.

13                   DR. BYRON WILLIAMS:   And again, just  
14 to go back to currently, the --

15                   MR. HAL TURNER:   Currently that's what  
16 we're doing in generation and wholesale.

17                   DR. BYRON WILLIAMS:   Right, currently  
18 for CEF16.

19                   MR. HAL TURNER:   As -- as documented  
20 in CEF16, no, test years in CEF16, yes.

21                   DR. BYRON WILLIAMS:   For generation  
22 and --

23                   MR. HAL TURNER:   For generation and  
24 wholesale, correct.

25                   DR. BYRON WILLIAMS:   So again, Mr.

1 Steele, this is distribution. If you're not -- are --  
2 are you generally -- you've taken a quick look at the  
3 Toronto Hydro distribution materials, sir?

4 MR. CHUCK STEELE: Yes, I did skim  
5 through it.

6 DR. BYRON WILLIAMS: Okay. You've not  
7 memorized it yet?

8 MR. CHUCK STEELE: No, I -- I have not  
9 memorized it, sorry.

10 DR. BYRON WILLIAMS: And I apologize.  
11 Apparently the document as a whole was 2,500, and I --

12 MR. CHUCK STEELE: Yeah, when -- when  
13 I skimmed through it, I skimmed through the 2,500  
14 pages, but I -- I noticed in your book of documents,  
15 it's the significantly less, so.

16 DR. BYRON WILLIAMS: And there was no  
17 in -- intent, sir. I -- I do apologize for that  
18 inconvenience.

19 If we can turn to page 78 of -- of this  
20 document, and -- and focus on figure 4. Mr. Steele,  
21 the narrative here by Toronto Hydro is -- as presented  
22 in figure 4, is that they've got a -- what they  
23 consider to be the economically optic -- optimal  
24 capital investment approach involving a big bang in  
25 2015 of 2.56 billion, and then smaller amounts out to

1 2019, considerably smaller amounts. Do you see that,  
2 sir?

3 MR. CHUCK STEELE: Yes, I do.

4 DR. BYRON WILLIAMS: And again, if you  
5 you -- you -- If you need a reference, it's again on  
6 this page, but you see Toronto Hydro is, in essence,  
7 saying given the large step increases in rates, they  
8 wanted to look at a couple of different options. Is  
9 that your understanding of this -- this paper as well,  
10 sir?

11 MR. CHUCK STEELE: Yes, that is my  
12 understanding.

13 DR. BYRON WILLIAMS: And if we turn to  
14 page 81, you'll see a description by Toronto Hydro of  
15 an accelerated execution step -- strategy, consisting  
16 of investments of \$840 million thereabouts in -- in  
17 five (5) consecutive years, being 2015 through 2019.

18 Would that be fair, sir?

19 MR. CHUCK STEELE: Yes.

20 DR. BYRON WILLIAMS: So that's one (1)  
21 of the options Toronto Hydro considered, and then if  
22 we go to page 82, sir, you'll see a consideration of  
23 the paced Ontario Hydro consideration, which is of  
24 investments, I'll suggest to you, from 2015 through  
25 2019 in the range of half a billion dollars annually?

1 MR. CHUCK STEELE: Yes, absolutely.

2 DR. BYRON WILLIAMS: And then with an  
3 understanding that -- that this -- the magnitude of  
4 investments would have to be paced out -- out between  
5 2020 and 2037? Is that fair, sir?

6 MR. CHUCK STEELE: Yes.

7 DR. BYRON WILLIAMS: And if you're not  
8 able -- able to comment on that -- this, sir, that's  
9 fine, but ultimately, what Toronto Hydro recommended  
10 was the paced strategy. Is that your understanding?  
11 And if you're not able to comment, that's fine.

12 MR. CHUCK STEELE: You know, I -- I  
13 can't comment. I'm not sure what they recommended.

14 DR. BYRON WILLIAMS: That's not a  
15 problem. If we go to page 83, though, sir, you'll see  
16 a comparison again, Toronto Hydro, although not as  
17 complex as -- as EPCOR, is projecting a comparison  
18 between -- in terms of the impacts upon duration,  
19 interruptions, and frequency interruptions between its  
20 recommended plan and run-to-fail.

21 Do you see that, sir?

22 MR. CHUCK STEELE: Yes, I -- I -- can  
23 -- can I assume -- it -- it's hard to tell the scale,  
24 but the -- or it's hard to tell the colours on this  
25 document, but I'm assuming the run-to-fail results in

1 worsening reliability.

2 DR. BYRON WILLIAMS: As compared --  
3 yeah --

4 MR. CHUCK STEELE: As -- as compared  
5 to --

6 DR. BYRON WILLIAMS: I'll -- I'll  
7 suggest to you --

8 MR. CHUCK STEELE: -- as compared to  
9 their proposed plan?

10 DR. BYRON WILLIAMS: I'll ask you to  
11 accept that subject to check, sir.

12 MR. CHUCK STEELE: Okay.

13 DR. BYRON WILLIAMS: And again, sir,  
14 as comparison to EPCOR, this is a scenario analysis  
15 projecting future impacts on duration interruptions  
16 and frequency interruptions, albeit considerably less  
17 sophisticated?

18 MR. CHUCK STEELE: No, I -- I agree.  
19 I see the similarities, and I note that both are  
20 targeting reliability metrics and improvements to  
21 reliability.

22 DR. BYRON WILLIAMS: And --

23 MR. JOEL WORTLEY: It is interesting  
24 to note that, you know, the -- there's quite a bit of  
25 discussion about cost, and quite a bit of discussion

1 around performance, but not a lot of discussion around  
2 risk, and that certainly, if -- if the risks are  
3 acceptable in the paced solution, why would you ever  
4 go to the accelerated solution? It just makes sense --

5 DR. BYRON WILLIAMS: Okay --

6 MR. JOEL WORTLEY: -- provided the  
7 risks are acceptable.

8 DR. BYRON WILLIAMS: Thank you. I  
9 wonder if we can turn to page 84, and focus on the --  
10 this section on customer needs and preferences.

11 And Mr. Steele. I don't know if you've  
12 had a chance to look specifically at lines 9 through  
13 15, but I'll suggest to you that there you see the  
14 customer consultation process undertaken by Toronto  
15 Hydro with regard to its capital investment plan?

16 MR. CHUCK STEELE: Yes, I see.

17 DR. BYRON WILLIAMS: And you'll see,  
18 sir, focusing on line 11, that it included focus  
19 groups, agreed?

20 MR. CHUCK STEELE: Yes.

21 DR. BYRON WILLIAMS: An online  
22 workbook accessible to all customers, agreed?

23 MR. CHUCK STEELE: Yes, that's what it  
24 says.

25 DR. BYRON WILLIAMS: Facilitator --

1 facili -- it says that it includes -- included  
2 facilitator-led workshops with commercial and  
3 industrial users as well?

4 MR. CHUCK STEELE: Yes.

5 DR. BYRON WILLIAMS: And finally, a  
6 statistical telephone survey, agreed?

7 MR. CHUCK STEELE: Agreed.

8 DR. BYRON WILLIAMS: And then it also  
9 suggests that there was a final report on the process  
10 and findings of this consultation made available?

11 MR. CHUCK STEELE: Yes. I -- you  
12 know, if I can -- I just, you know, add -- to make  
13 sure I understand it correctly, my understanding is  
14 that Toronto Hydro specifically had -- had engagement  
15 with their ratepayers regarding their preferred plan  
16 to -- to look at investments directed towards improved  
17 reliability.

18 Certainly, from Manitoba Hydro's  
19 perspective, our investments, or the distribution  
20 space are driven by condition assessments, so I don't  
21 know that we would -- we would necessarily do the same  
22 thing, but -- but my understanding may not be  
23 correctly. Like I said, I only skimmed through the  
24 document.

25 DR. BYRON WILLIAMS: And let's just go

1 to that. Mr. Wortley, as -- as we look at the vision  
2 for sustaining capital and capital investments more  
3 broadly, are these type of consumer engagement  
4 undertaken by Toronto Hydro among the types that  
5 Manitoba Hydro might contemplate?

6 MR. JOEL WORTLEY: So an element of --  
7 of Manitoba Hydro's new corporate plan is having a  
8 very -- customer focus. It's one (1) of the four (4)  
9 pillars of the Company and one to which we need to do  
10 considerable development in terms of engaging our  
11 customers and making sure that customers -- we  
12 understand what -- what customers expect in terms of  
13 value, and we deliver it. And so that -- that  
14 strategy has not been fleshed out yet, but I could see  
15 that something like this could be part of it.

16 MR. GERALD NEUFELD: I would like to  
17 comment on the -- on the SAIFI and SAIDI, and -- and  
18 while I believe that SAIDI and SAIFI are -- are good  
19 lagging measures, and upgraded -- system upgrade plans  
20 could be developed around SAIDI and SAIFI, they have  
21 the greatest relevance where there's a denser  
22 population areas, and the service feeds -- you have  
23 serve -- multiple service feeds int -- into that area.

24 We -- we have a system on the east side  
25 of Lake Winnipeg that -- where we responded on -- on

1 Coalition -- Coalition IR-157. And here's --here's  
2 our location which includes Poplar River, Berens  
3 River, Bloodvein River, Little Grand Rapids,  
4 Pauingassi, Sagkeeng, Manigotagan, Black River, and a  
5 -- a large cottage area. And they have a single feed  
6 in -- into there.

7                   And if we lose that single feed, if we  
8 lose the transformer, we've got widespread outages for  
9 a long time. There is no communication into that  
10 area. And I would submit to you that the -- the study  
11 of SAIDI and SAIFI in an application like that  
12 probably has little relevance to what the -- what the  
13 final solution should -- will -- will look like under  
14 a -- under a -- a solution that balances cost and --  
15 and reliability.

16                   DR. BYRON WILLIAMS: Thank you, Mr.  
17 Neufeld, for sharing that. You're in no way  
18 suggesting, though, that there is not value in looking  
19 at the consequences for investment decisions on  
20 different performance metrics?

21                   MR. GERALD NEUFELD: I absolutely am  
22 not saying that, but all I'm saying is that the SAIDI  
23 and SAIFI in using these outage statistics have their  
24 application, and there -- as Mr. Wortley had suggested  
25 earlier, there's a lot of parameters that we take into

1 account, whether it be raw liability -- safety --  
2 safety measures could fall, and the reliability could  
3 be safe -- safety for the public, safety for Hydro  
4 workers, environmental aspects, and there's a wide  
5 spectrum of -- of factors that are key factors which  
6 we take into account as we prioritize our projects.

7 DR. BYRON WILLIAMS: I wonder if we  
8 can turn very quickly to Coalition Tab 2 of this book  
9 of not -- doc -- documents, and specifically page 27.  
10 I apologize, Kristin, 28's fine.

11 Mr. Steele, this is a -- a look at pole  
12 replacement and substation refurbishment, distribution  
13 unit cost benchmarking as undertaken by Hydro One,  
14 agreed?

15 MR. CHUCK STEELE: Yes.

16 DR. BYRON WILLIAMS: And currently,  
17 Manitoba Hydro has not undertaken bench makings --  
18 benchmarking studies to compare its capital spending  
19 or asset units cost to other utilities, agreed?

20

21 (BRIEF PAUSE)

22

23 MR. CHUCK STEELE: Not that I'm aware  
24 of for distribution,

25 DR. BYRON WILLIAMS: Okay. Turning to

1 page 31 of this document. And really the last  
2 paragraph, and -- and if Hydro cannot answer this,  
3 this is fine.

4 But you can see Hydro One indicating  
5 that it had made efforts to include more Canadian  
6 utilities, but had been only successful in -- in  
7 garnering Hydro Quebec, BC Hydro, and three (3)  
8 Ontario local utilities.

9 You see that -- that reference?

10 MR. CHUCK STEELE: Yes, yes, I do.

11 DR. BYRON WILLIAMS: To your knowledge  
12 was Manitoba Hydro appointed -- approached in terms of  
13 this benchmarking study?

14 MR. CHUCK STEELE: You know, not to my  
15 knowledge. But certainly I was -- I was not  
16 personally approached, and neither was my colleague  
17 behind me who would've been the person to be  
18 approached.

19 DR. BYRON WILLIAMS: Okay. And we  
20 won't go through this, but I'll suggest to you, Mr.  
21 Steele, that if we look to pages 32 through 50 of this  
22 document, one would get an indication of some of the  
23 analysis undertaken in terms of the benchmark --  
24 benchmarking costing exercise.

25 Fair enough?

1 MR. CHUCK STEELE: Yeah, fair enough.  
2 You -- you know, when I -- when I did skim through  
3 this document, that I did notice of some of the  
4 recommended actions on page 29 were consistent with  
5 some of Manitoba Hydro's current practices. For  
6 example, our Integrated Pole Maintenance Program and  
7 are -- are detailed overhead feeder inspection  
8 programs too, so.

9 DR. BYRON WILLIAMS: Thank you. Mr.  
10 Chair, just -- I'm not sure what that timeframe is for  
11 today.

12 THE CHAIRPERSON: 5:30.

13 DR. BYRON WILLIAMS: 5:30, okay.

14 MR. JOEL WORTLEY: Maybe I can just  
15 add that relative to -- to the benchmarking in  
16 general, that benchmarking has its utility -- has its  
17 utility as a -- as an indicator of where to look,  
18 let's say. And as Mr. Shepherd pointed out, I believe  
19 it was on Monday, it -- it's not terribly useful in  
20 terms of making particular decisions, but it can be  
21 very helpful in guiding you as to where to go next.

22 And so I would suggest that -- that  
23 studies like this certainly are of value, but need to  
24 be done at the -- the right time and place such that  
25 the information is fruitful in terms of the next step

1 in your decision-making. And so it is a useful tool  
2 when applied correctly. That's -- I just want to  
3 caution a little bit.

4 MR. CHUCK STEELE: Yeah, I -- I can  
5 also add, although we may not have participated in  
6 this study comparing capital costs, that I believe  
7 METSCO's report did reference that are pole  
8 replacement costs were -- were favourable to other  
9 utilities, but...

10

11 CONTINUED BY DR. BYRON WILLIAMS:

12 DR. BYRON WILLIAMS: Thank you for  
13 that.

14 Let's move away from -- from these  
15 examples of benchmarking. And -- and, Mr. Wortley,  
16 would it be fair to say that, in terms of corporate  
17 value management, the Corporation envisions a three  
18 (3) phase plan? And I can give you the phases, if  
19 that would assist user.

20 MR. JOEL WORTLEY: It -- it would help  
21 me if --

22 DR. BYRON WILLIAMS: Okay.

23 MR. JOEL WORTLEY: -- if you had a  
24 reference or -- I'm not sure what you're -- where's  
25 you're going.

1 DR. BYRON WILLIAMS: I'm -- I'm  
2 referring to -- it's certainly set -- I don't think we  
3 need to go there. I think you'll -- you'll -- you'll  
4 know what once I say it. But Section 5.11 of Tab 5 of  
5 the GRA.

6 But in essence, Phase 1 being  
7 assessment of current asset management practices,  
8 which is now complete. Agreed?

9 MR. JOEL WORTLEY: Yes.

10 DR. BYRON WILLIAMS: Phase 2 being the  
11 development of asset management policies and  
12 strategies. Agreed?

13 MR. JOEL WORTLEY: Agreed.

14 DR. BYRON WILLIAMS: And Phase 3,  
15 being the development of a detailed roadmap for the  
16 implementation of corp -- of a corporate asset  
17 management framework. Agreed?

18 MR. JOEL WORTLEY: That's right. And  
19 in terms of the -- this three (3) phase process you've  
20 indicated to My Friend Mr. Peters, that you anticipate  
21 the -- that the implementation plan will take a  
22 somewhere in -- in between three (3) to five (5)  
23 years. Agreed?

24 MR. JOEL WORTLEY: Well, it's a little  
25 bit more nuance Of that. So the -- as I try to

1 described a little bit earlier, there -- there's  
2 different scales of asset management. And so the --  
3 the corporate asset management initiative and the  
4 three (3) phases as you've described, until we roadmap  
5 that out I don't really know how long that's gonna  
6 take, and I don't really know how far we're going to  
7 go, in that -- will -- will the appropriate time to  
8 stop be at a Level 3 maturity, or do we want to put  
9 the Level 4, beyond? I'm not sure. And we won't be  
10 able to make that decision till we see what it's going  
11 to cost to get there, and what value or what benefit  
12 we think we're going to -- going to achieve by getting  
13 there.

14                   The three (3) to five (5) year  
15 timeframe apply specifically to our capital portfolio  
16 management and the ability to achieve our objectives  
17 of optimizing/executing portfolios and forecasting  
18 investment requirements on a -- on a needs basis into  
19 the future. And so, one (1) is part of the other.  
20 Capital investment, asset investment planning is a  
21 subset of asset management.

22                   But asset management totality is a much  
23 larger endeavour, involving, as I mentioned earlier,  
24 the alignment of an organization's activities to  
25 particular goals that requires a culture shift and a -

1 - and a realignment of the entire organization to be  
2 fully effective. And that -- I'm not sure how long  
3 that's going to take.

4 DR. BYRON WILLIAMS: So, just so I  
5 understand, the three (3) to five (5) year timeframe  
6 applies to the subset, being the portfolio management.  
7 Agreed?

8 MR. JOEL WORTLEY: Correct.

9 DR. BYRON WILLIAMS: Okay. And -- and  
10 in terms of Phase 2 -- and again, you don't need to  
11 turn there, but referencing Coalition 2-67 -- at the  
12 time of Second Round IRs Phase 2 had not commenced.  
13 Agreed?

14 MR. JOEL WORTLEY: Correct.

15 DR. BYRON WILLIAMS: And that was due  
16 to competing organizational prior -- priorities in the  
17 Voluntary Departure Program. Agreed?

18 MR. JOEL WORTLEY: Yes, the  
19 Corporation -- the Corporation's restructuring and  
20 absorbing of the voluntary departures is our competing  
21 priorities. As well as, there's only so many  
22 improvement initiatives that can be undertaken at a  
23 time. And so the corporate -- the Capital Portfolio  
24 Management Program is -- is being executed, the  
25 enterprise asset management is being rolled out.

1 There -- there comes a point of saturation in to how  
2 much change can be absorbed by an organization.

3 DR. BYRON WILLIAMS: And, sir, in  
4 terms of commencing Phase 2, what is your most -- what  
5 is your current expectation?

6 MR. JOEL WORTLEY: My current  
7 expectation would be that we need to do some training,  
8 need to do some awareness -- some broad awareness  
9 around the organization, such that our leaders and our  
10 staff and our decision-makers understand the  
11 difference between managing assets and asset  
12 management, so that they're able to -- to meaningfully  
13 participate in discussions of -- of how to move the  
14 company forward. And I expect that that will occur  
15 beginning in the new year as we come out of the  
16 voluntary departure, which will be February 1. And  
17 we'll move forward as quickly as we can from there.

18 DR. BYRON WILLIAMS: Just so I  
19 understand, sir, are you suggesting that Phase 2 will  
20 commence in the new year?

21 MR. JOEL WORTLEY: Yes.

22 DR. BYRON WILLIAMS: And an output  
23 from Phase 2, sir, will be the development of  
24 corporate asset management strategies and policies.  
25 Those are anticipated to be completed in Phase 2,

1 agreed?

2 MR. JOEL WORTLEY: Correct.

3 DR. BYRON WILLIAMS: And it's expected  
4 that these documents will help provide consistent  
5 asset management strategies, standards, and clearly  
6 establish asset management roles and responsibilities.  
7 Agreed?

8 MR. JOEL WORTLEY: They will help,  
9 yes.

10 DR. BYRON WILLIAMS: And when -- given  
11 the start in 2018, when do -- does one expect Phase 2  
12 to be completed.

13 MR. JOEL WORTLEY: The schedule for  
14 Phase 2 has not been fleshed out or adopted yet, so we  
15 will have to do the plan and determine the schedule as  
16 -- available to resource it.

17 DR. BYRON WILLIAMS: Ballpark, sir. A  
18 year? Three (3) years?

19 MR. JOEL WORTLEY: Oh, it's -- no,  
20 it's -- this is a shorter-term step, subject to -- to  
21 what else -- what else comes up to compete with it, it  
22 should certainly be complete within a year.

23 DR. BYRON WILLIAMS: I want to turn to  
24 a bit of a different subject matter. Probably, most  
25 of these questions will go to you, Mr. Steele. But,

1 Mr. Wortley, or the rest of the team, feel free to --  
2 to chip in.

3                   Would it be fair to say that on an  
4 individual asset basis, in general one can make better  
5 decisions, if you have information beyond the age of  
6 the asset?

7                   MR. CHUCK STEELE:    That -- that's  
8 probably fair to say.  I would -- I would add the  
9 caveat that it probably depends on the asset, the  
10 level of information you would -- you would benefit  
11 from.

12                   I think for a lot of distribution  
13 assets, it's -- it's more expensive to collect the  
14 information than it is to action on the asset when it  
15 fails, for example.

16                   DR. BYRON WILLIAMS:   It would also be  
17 fair to say that, given Manitoba's climate and unique  
18 operating characteristics, the life-cycle of its  
19 assets may differ from similar assets in other  
20 regions.  Agreed?

21                   MR. CHUCK STEELE:    I -- I agree.  I  
22 think every utility has its own unique set of  
23 circumstances, for sure.

24                   DR. BYRON WILLIAMS:   And certainly  
25 having high-quality data of your own may reduce the

1 reliance on industry life-cycle dat -- data, which may  
2 not necessarily be reflective of the Hydro experience.  
3 Agreed?

4 MR. CHUCK STEELE: Agree.

5 DR. BYRON WILLIAMS: And you'll  
6 recall, we just had a extensive discussion about  
7 predictive analytics -- analytics?

8 MR. CHUCK STEELE: Regarding other  
9 utilities' --

10 DR. BYRON WILLIAMS: Performance, yes.

11 MR. CHUCK STEELE: -- approach to  
12 reliability performance, yes --

13 DR. BYRON WILLIAMS: You recall that  
14 conversation?

15 MR. CHUCK STEELE: -- I recall.

16 DR. BYRON WILLIAMS: And certainly  
17 Manitoba Hydro's aware that the need to use  
18 replacement data to help build predictive models and  
19 evolve the Corporation's asset management capabilities  
20 is -- it's important. Agreed?

21 MR. CHUCK STEELE: Yes. And maybe as  
22 a point of clarification, generally speaking, in the -  
23 - in the test years and in the short-term, assets are  
24 replaced based on condition assessments, actual --  
25 actual field measurements of either visual or

1 mechanical assessments. But certainly you're correct  
2 in predicting future expenditures, the more data to --  
3 to -- the more accurate those expenditures can be  
4 predicted.

5 DR. BYRON WILLIAMS: And that's  
6 particularly the case in terms of service terminal  
7 failure data, which is particularly important to the -  
8 - to help predictive models. Agreed?

9 MR. CHUCK STEELE: Sorry, the -- the  
10 phrase used: terminal failure data?

11 DR. BYRON WILLIAMS: I probably  
12 mispoke terribly. I meant to say 'service terminal  
13 failure data'.

14 MR. CHUCK STEELE: Service terminal  
15 failure date.

16 DR. BYRON WILLIAMS: Yeah.

17 MR. CHUCK STEELE: Like, you're --  
18 you're suggesting the -- when -- when the ass --  
19 predict -- predicting when the asset will actually  
20 fail and trying to, where it's -- where it's economic  
21 to do so, replace that asset just prior to failure?  
22 Like that, that -- that would be beneficial, yes.

23 DR. BYRON WILLIAMS: At a high level,  
24 Mr. Wortley, I'll send this to you, it would be fair  
25 to say that the operating groups within Manitoba Hydro

1 are at different levels of maturity, in terms of  
2 applying asset health indices data?

3 MR. JOEL WORTLEY: Yeah, that would --  
4 that would be fair.

5 DR. BYRON WILLIAMS: And generally  
6 speaking, as compared to generation, transmission and  
7 distribution are developing their maturity? I knew  
8 Mr. Neufeld was going to jump for this one.

9 MR. GERALD NEUFELD: Thank you. Yes,  
10 we are developing the maturity. We have asset health  
11 curves. We've been working closely with Kinectrics.

12 But I'd like to take the -- the topic  
13 back to what some of the key drivers are for  
14 facilities where -- in the -- in the year process, or  
15 will shortly be embarking on, to improve -- to improve  
16 the reliability of supply in -- in southern parts of  
17 Manitoba. And I used -- I used the term 'a  
18 reliability of supply' rather loosely.

19 Because what I really mean is, we want  
20 to make sure that the -- the transmission feeds into  
21 the areas where we've got large residential loads,  
22 such as in the Steinbach area, or such as in the  
23 Morden/Winkler area where there's been a lot of -- a  
24 lot of -- of growth in the last number of years, that  
25 we're able to meet the --the loads.

1                   This doesn't have to do with asset  
2 health indices. This has to do, simply -- very simply  
3 with having the of the -- the wires in place and the  
4 power transformers in place to be able to -- to meet  
5 the load demand. And it's that simple.

6                   And so, asset health indices do have a  
7 substantial amount of value. And the value comes in  
8 to -- into play when all other factors are equal. And  
9 I'm in the suggest to you that the error that we're in  
10 on the transmission side, where we're trying to prove  
11 -- improve the reliability of supply to various parts  
12 of the province today, we probably wouldn't be using  
13 asset health indicators as a -- as the -- as the  
14 driver for -- for the recommended upgrades.

15                   And there's another topic on here. And  
16 I'm -- I'm going to cut -- I'm going to keep this  
17 fairly short. But there are -- of this -- there's  
18 other -- other equipment that we're in the process of  
19 -- of replacing. It has to do with the Bipole III  
20 project, which is being installed.

21                   And the net impact to the -- to the  
22 overall system in southern Manitoba with having Bipole  
23 III in play, is the there's a phenomenon called the  
24 'short-circuit', or the amount of power that flows  
25 when -- when there's a connection say to -- from a

1 tree to the ground on the -- on the distribution  
2 system or, for that matter, on the transmission  
3 system, and the -- the impact of putting in a large  
4 facility, a substantial facility like Bipole III, is  
5 that we find ourselves with circuit breakers. And  
6 these are very large circuit breakers, for 230,000  
7 volts and a hundred and -- 115,000 volts. And these -  
8 - the circuit ratings are being exceeded.

9                   And it just simply wouldn't -- it would  
10 be a -- it -- we just simply couldn't operate Bipole  
11 III without having first replaced those breakers, and  
12 -- and there's quite a few of them.

13                   So there's a couple of areas where  
14 asset health indicators are not the driver for -- for  
15 making improvement decisions. And these are fairly  
16 costly decisions.

17                   DR. BYRON WILLIAMS: Mr. Neufeld, and  
18 certainly not wanting to invite a long answer, but  
19 just in terms of the question I posed, as compared to  
20 generation, and in terms of asset health indices and  
21 how they're integrated, there's some maturing to do on  
22 the transmissions. Agreed?

23                   MR. GERALD NEUFELD: Agreed.

24                   MR. CHUCK STEELE: If I can comment on  
25 --

1 DR. BYRON WILLIAMS: Mr. Steele, I was  
2 going to just ask for that.

3 MR. CHUCK STEELE: Yeah. Sorry.

4 DR. BYRON WILLIAMS: So go ahead.

5 MR. CHUCK STEELE: Thank you for the  
6 opportunity.

7 Yeah, you know, I agree, maturity  
8 somewhat relative between the three (3) operating  
9 groups. But certainly distribution being comprised  
10 of, you know, literally millions of low-cost assets,  
11 often it's probably more expensive to -- to do  
12 detailed health assessments, as opposed to allowing  
13 those assets to run to failure.

14 And then on the other end of the  
15 spectrum, as I pointed out in the Navigant report,  
16 with respect to their recommendations to Ontario  
17 Hydro, or Hydro One I guess it was, we -- we are  
18 leading industry with respect to some of our  
19 integrated pool maintenance programs.

20 DR. BYRON WILLIAMS: Okay. And Mr.  
21 Steele, in terms of distribution, your department has  
22 been blessed with two (2) recent studies from  
23 Kinectrics, one being the Manitoba Hydro 2016 Asset  
24 Condition Assessment, which is dated May 26, 2017.  
25 Agreed?

1 MR. CHUCK STEELE: Yes.

2 DR. BYRON WILLIAMS: The other being  
3 the Manitoba Hydro Acid Degradation Curve Development,  
4 which is dated July 20th, 2017. Agreed, sir?

5 MR. CHUCK STEELE: Yes.

6 DR. BYRON WILLIAMS: And if we could  
7 go to MFR, Minimum Filing Requirement, 92, and  
8 specifically the Kinectrics Manitoba Hydro 2016 Asset  
9 Condition Assessment. And page 30 -- just go to the  
10 cover page for a minute, so page 1. This is the 2014  
11 one. We're actually looking for the one dated May  
12 26th, 2017.

13 Mr. Chair, I wonder if we can just  
14 stand down for a second, just to make sure we can find  
15 this document.

16 THE CHAIRPERSON: Do you want to  
17 break, Mr. Williams, for --

18 DR. BYRON WILLIAMS: Well, just -- I  
19 know this is riveting material so I would -- I'd  
20 suggest maybe a brief five (5) minute break --

21 THE CHAIRPERSON: Yes, certainly.

22 DR. BYRON WILLIAMS: -- just to make  
23 sure we're cued up.

24 THE CHAIRPERSON: Okay.

25

1 --- Upon recessing at 4:45 p.m.

2 --- Upon resuming at 4:57 p.m.

3

4 THE CHAIRPERSON: Dr. Williams...?

5

6 CONTINUED BY DR. BYRON WILLIAMS:

7 DR. BYRON WILLIAMS: Yes, and thank  
8 you. And, Mr. Steele, just in terms of Kinectrics  
9 work on asset condition assessment, the term "data  
10 availability indicator" or DAI measures the amount of  
11 condition parameter data that an asset has as it's  
12 measured against the condition parameters included in  
13 the health index formula.

14 Would that be fair, sir?

15 MR. CHUCK STEELE: Yes.

16 DR. BYRON WILLIAMS: So an asset with  
17 all condition parameter data represented will, by  
18 definition, have a DAI value of 100 percent. Agreed?

19 MR. CHUCK STEELE: Agreed.

20 DR. BYRON WILLIAMS: If we can turn to  
21 table 1, page 34, I believe of this document. No,  
22 let's go to page 14. My apologies. Here we go. And  
23 actually, can we make sure that we have the DAI in --  
24 that's perfect.

25 Mr. Steele, just in terms of some of

1 the distribution assets studied by Kinectrics, table 1  
2 provides a health index results summary; agreed?

3 MR. CHUCK STEELE: Agreed.

4 DR. BYRON WILLIAMS: And on the left-  
5 hand side we see certain asset categories ranging from  
6 station breakers at the top to OH switches at the  
7 bottom; agreed?

8 MR. CHUCK STEELE: Agreed.

9 DR. BYRON WILLIAMS: And the last two  
10 (2) right-hand columns, the second last one captures  
11 the age availability; agreed?

12 MR. CHUCK STEELE: Agreed.

13 DR. BYRON WILLIAMS: And in essence,  
14 that represents the -- for that particular asset the  
15 percentage of asset items for which Manitoba Hydro has  
16 the information related to their age; correct?

17 MR. CHUCK STEELE: Correct.

18 DR. BYRON WILLIAMS: And if we look to  
19 the average DAI or data availability indicator that's  
20 on the extreme right-hand column, sir?

21 MR. CHUCK STEELE: Yes.

22 DR. BYRON WILLIAMS: And we see there  
23 in terms of those parameters a high in the range of 88  
24 percent, which is about -- about seven (7) or eight  
25 (8) lines down. Do you see that, sir?

1 MR. CHUCK STEELE: Yes.

2 DR. BYRON WILLIAMS: And then we see  
3 that the availability of data for a number of these  
4 assets is at -- in terms of the parameters used by  
5 Kinectrics is -- is zero. Agreed?

6 MR. CHUCK STEELE: Agreed.

7 DR. BYRON WILLIAMS: And subject to  
8 check, sir, would you agree that for -- for fifteen  
9 (15) of these twenty-three (23) assets it is less than  
10 the average DAI is 50 -- is less than 50 percent?

11 MR. CHUCK STEELE: Subject to check.  
12 I -- I won't count them, but, you know, I question  
13 some of the relevance for those assets where it's  
14 identified as zero percent. I -- I believe that a lot  
15 of those are -- if not all of them referred to assets  
16 that are run-to-failure.

17 DR. BYRON WILLIAMS: And so my  
18 understanding of Hydro's position in terms of the  
19 parameters is that for some of these assets, it's  
20 acceptable to have them less than 50 percent, for  
21 others it is not.

22 Would that be fair, sir.

23 MR. CHUCK STEELE: That's fair.

24 DR. BYRON WILLIAMS: If we could pull  
25 up the other Kinectrics study, which is found as

1 attachment 1, the Coalition MH-1-160, and go to the  
2 executive summary, please, which I believe is at page  
3 5. So that's Coalition MH 1-160, attachment one.

4 And I'm looking for Roman Numeral V.  
5 So I guess we need to go back a few pages.

6 THE CHAIRPERSON: Dr. Williams,  
7 there's no test on the formulas, is there?

8 DR. BYRON WILLIAMS: If there were, I  
9 would fail.

10

11 CONTINUED BY DR. BYRON WILLIAMS:

12 DR. BYRON WILLIAMS: But, Mr. Steele,  
13 this was -- this is relatively hot off the presses.  
14 This was received from Kinectrics by Manitoba Hydro in  
15 the summer; agreed?

16 MR. CHUCK STEELE: Agreed.

17 DR. BYRON WILLIAMS: And I just want  
18 to draw your attention on the executive summary to the  
19 -- the fifth paragraph in which Kinectrics suggests  
20 that Manitoba Hydro's assets tend to stay in service  
21 longer than in other jurisdictions.

22 Do you see that reference, sir?

23 MR. CHUCK STEELE: Yes.

24 DR. BYRON WILLIAMS: That was the  
25 finding of Kinectrics?

1 MR. CHUCK STEELE: Yes.

2 DR. BYRON WILLIAMS: Agreed? And the  
3 suggestion by Kinectrics, in this paragraph, is that  
4 since the removal based curves are rather conservative  
5 due to replacement of assets for reasons other than  
6 condition, the expectation is that the condition based  
7 curves will demonstrate even longer service lives.

8 Agreed?

9 MR. CHUCK STEELE: Agreed.

10 DR. BYRON WILLIAMS: And elsewhere in  
11 this document Kinectrics suggests that these longer  
12 asset lives may be a factor both of the weather -- the  
13 cold weather in Manitoba, as well as Manitoba Hydro's  
14 practices; fair enough?

15 MR. CHUCK STEELE: If I recall the  
16 document correctly, I believe you're -- you're correct  
17 there.

18 DR. BYRON WILLIAMS: Some short  
19 snappers to finish off the day and, Mr. Neufeld, I've  
20 neglected you so I -- I do have a couple questions  
21 about the transmission and -- and Copperleaf.

22 And, sir, I -- I want to direct your  
23 attention to Coalition Information Request first round  
24 181. The attachment which is a lengthy document and  
25 specifically to page 80 of that attachment.

1                   Mr. Neufeld, I'll give you a second to  
2 orientate yourself, but this is the asset investment.  
3 This is a document prepared by the transmission  
4 business unit in March 2015; would that be fair? Do  
5 you want to go back to page 1 to orientate yourself,  
6 sir?

7                   Let's go to page 1, please. Oh, this  
8 is the -- excuse me, this is the generation slide. A  
9 bit further on in this document, sir, is the  
10 transmission side. You'll agree to that?

11                   MR. GERALD NEUFELD: Let's -- let's --  
12 let's find it.

13                   DR. BYRON WILLIAMS: Okay. Boy, that  
14 generation slide says a lot, lots of pictures. Right.  
15 Let's go to page 76.

16                   Sir, you'll accept that this is the --  
17 the asset investment planning software implementation  
18 roadmap prepared by the Transportation Business Unit  
19 on or about March of 2015?

20                   MR. GERALD NEUFELD: Right, that's the  
21 Transmission Business Unit.

22                   DR. BYRON WILLIAMS: Okay.

23                   MR. GERALD NEUFELD: We transport  
24 electrons.

25                   DR. BYRON WILLIAMS: Okay. That's

1 your team, sir?

2 MR. GERALD NEUFELD: That's correct.

3 DR. BYRON WILLIAMS: I'm not that good  
4 with engineering humour, but I'm taking that -- that  
5 was funny, sir? Lawyer -- I'm sure engineers are way  
6 more funny than lawyers, let me just say that.

7 And I wanted, sir, to -- to direct you  
8 to -- to page. Just one second, please.

9

10 (BRIEF PAUSE)

11

12 DR. BYRON WILLIAMS: We're going to  
13 have to scroll through this. It's only a couple of  
14 pages, but I'm looking, sir, for the reference when --  
15 when transmission is discussing the suitability of  
16 Copperleaf for -- for it. So keep scrolling through  
17 please, Kristin, and I apologize for this, Mr. Chair  
18 and members of the panel. Keep going please. Keep  
19 going, please. Keep going, please. It's probably  
20 going to be about page 85. Keep going. Okay, thank  
21 you. And my apologies for the delay. No, excuse me.  
22 Go back to page 85 for a second.

23

24 (BRIEF PAUSE)

25

1 DR. BYRON WILLIAMS: Oh, my apologies.  
2 I had it right in front of me. It's page 79 at the  
3 top. And my apologies. And just scroll up to page 78  
4 for just a second. Now that I've succeeded in  
5 confusing everyone -- no, please keep -- yeah, right  
6 there at the bottom, the last paragraph on page 78.

7 Mr. Neufeld, you'll see a discussion  
8 starting at the bottom of page 78 where there's an  
9 indication that generation operations is currently  
10 using Copperleaf C55 as an -- as an AIP tool.

11 You'll see that, sir?

12 MR. GERALD NEUFELD: I do, sir.

13 DR. BYRON WILLIAMS: At the top of  
14 page 79, sir, you'll see the good folks at  
15 transmission -- I don't want to get into any jealousy  
16 between generation and transmission, but saying that  
17 this is a -- a more complex question for transmission,  
18 number 1, because it's more statistical in nature and  
19 reasons number 2 and 3 are set out there as well.

20 Do you see that, sir?

21 MR. GERALD NEUFELD: I do see that.

22 DR. BYRON WILLIAMS: And later on in  
23 this document, and at page 85 from Manitoba Hydro,  
24 there is a suggestion in the second paragraph -- the  
25 first full paragraph on this page, the second sentence

1 that to your knowledge, no AIP software tool has yet  
2 implemented a robust capability for modelling this  
3 type of risk.

4 So, Mr. Neufeld, you're nodding your  
5 head, so that -- you see that suggestion there in  
6 front of you, sir?

7 MR. GERALD NEUFELD: I do.

8 DR. BYRON WILLIAMS: So, sir, just --  
9 this is some housekeeping, but this is the state of  
10 affairs as it was in 2015. In terms of the  
11 transmission's needs, has it been satisfied now that  
12 Copperleaf 55, has the robust capability being sought?

13 MR. GERALD NEUFELD: I'd just like to  
14 check with my colleague.

15

16 (BRIEF PAUSE)

17

18 MR. GERALD NEUFELD: So we have made  
19 some progress, and what we've done is we've worked  
20 with Copperleaf to -- to ensure that it would accept  
21 our system reliabi -- reliability risk model that's --  
22 you made a reference to that earlier. And that was  
23 the gap that we had at the time of the -- that this  
24 was written and we've now closed that gap, and it will  
25 work.

1 DR. BYRON WILLIAMS: Okay. And  
2 Copperleaf 55 was implemented for transmission on or  
3 about August of 2017, subject to check?

4 MR. GERALD NEUFELD: That is correct.

5 DR. BYRON WILLIAMS: Mr. Chair and  
6 members of the panel, that was a lot of scrolling  
7 around for -- for those housekeeping questions, but I  
8 did want to ask Mr. Neufeld a couple questions before  
9 I'm finished with this -- this panel.

10 I am -- in terms of this panel, from my  
11 perspective, I know there's a wedding coming up for  
12 one (1) of them soon. I'm prepared to release them.  
13 I don't know if My Friend Mr. Hacault has any  
14 questions he anticipates for them or not.

15 MR. ANTOINE HACAULT: I don't think I  
16 do. I think Mr. Cormie and the members of the  
17 previous panel would be able to answer them. They're  
18 more of a general nature. So I don't have any  
19 questions that I would put to them today.

20 If -- I'm aware also that there's a --  
21 I don't know which member, but one (1) of the members  
22 has got a -- a wedding restriction, so we were -- we  
23 certainly are understanding of that, and would have  
24 tried to ask any questions.

25 MR. CHUCK STEELE: Just -- just for

1 the purpose of putting it on the record, my -- my son  
2 is getting married this weekend.

3 THE CHAIRPERSON: Well, our -- our  
4 congratulations, Mr. Steele, I'll just ask if the  
5 panel has any questions.

6 I've got a -- a question, and I -- I  
7 don't know who goes to, and I think it may go to Mr.  
8 McCallum. And it's more of an educational request for  
9 myself, and I suspect for some of the newer members of  
10 this panel. And I -- I would suggest we don't do it  
11 now, that we'll do it first thing tomorrow morning.  
12 But if you could draw our attention, if there are  
13 materials already filed, if not, if we could have a --  
14 sort of a ten (10) minute primer.

15 Here's what I'm interested in -- and we  
16 heard comments made from the panel in terms of their  
17 respective areas that in terms of establishing  
18 priorities, they have different ways of doing it.  
19 They look at different factors, and things of that  
20 nature.

21 And I'm interested in the business  
22 operations capital budget. And what the decision-  
23 making process is when they come to, I assume, Mr.  
24 McCallum or whatever, and you go through your  
25 departments and figure out how much money you would

1 like. And of course, there isn't enough money, and  
2 how you determine the allocation of the budget on the  
3 different areas, what factors you take into account  
4 now, and following the process you are undertaking  
5 right now on a system-wide basis, where you would like  
6 to be after you complete going through all of your --  
7 all of your phases, because I -- I anticipate it will  
8 be to -- it'll be a different place.

9                   But I'm trying to figure out, you know,  
10 you've got the multibillion dollar company. You've  
11 got all of these demands for transmission, generation,  
12 and distribution. Certainly, I suspect that there  
13 isn't enough money in the budget to meet everybody's  
14 requests. How do you -- how you make the decision or  
15 -- or decisions in terms of how -- who gets what  
16 money?

17                   So if there is materials filed already.  
18 If you could draw it to -- to us. If not, if you  
19 could, you know, spend ten (10) minutes tomorrow and  
20 sort of explain the different processes.

21                   Mr. McCallum's got a -- a frown. I --  
22 I don't know if this -- if thi -- if this is too  
23 complicated, or --

24                   MR. JAMES MCCALLUM: No, it -- it was  
25 -- it was -- no, definitely not a frown. It was just

1 trying to think of anywhere in -- in the 32,000 pages  
2 --

3 THE CHAIRPERSON: Yeah.

4 MR. JAMES MCCALLUM: -- of which, I've  
5 only reviewed 31,000. If we -- if we have the  
6 material. But we -- we can certainly speak to that.

7 THE CHAIRPERSON: Yeah, and it -- it -  
8 - if it's not, you know, first thing tomorrow, at some  
9 point, though. But I -- I would speak on behalf of  
10 myself. I'd like to understand the -- the decision-  
11 making process. Okay?

12 Thank you. We'll adjourn and -- and --  
13 sorry, there's -- sorry. Ms. Van Iderstine? Yeah.

14 MS. HELGA VAN IDERSTINE: I'm a novice  
15 on these things. The -- I do have one (1) question on  
16 re-exam, if you don't mind, and I have a comment --

17 THE CHAIRPERSON: Certainly.

18 MS. HELGA VAN IDERSTINE: -- I'd like  
19 to --

20 THE CHAIRPERSON: Yeah.

21 MS. HELGA VAN IDERSTINE: -- address  
22 the -- to the panel.

23

24 RE-EXAMINATION BY MS. HELGA VAN IDERSTINE:

25 MS. HELGA VAN IDERSTINE: So if I

1 might -- and I know you've turned it off, Kristen.

2 I'm sorry about that.

3 I would want to draw your attention --  
4 or Mr. Wortley's attention back to the UMS report,  
5 which is filed as Manitoba Hydro -- in Manitoba  
6 Hydro's application, which was Manitoba Hydro Exhibit  
7 5, I believe, Appendix 5.1. There we have it. Page  
8 6.

9 And Mr. Wortley, you'll recall that my  
10 friend, Mr. -- Dr. Williams took you to this prior to  
11 the -- or very early on in his cross-examination of  
12 you, and he asked questions about the maturity level  
13 of Manitoba Hydro and -- and how it had been  
14 established.

15 If you could take a look at that  
16 executive summary again and comment to us -- let us --  
17 the panel know a little bit more about where Manitoba  
18 Hydro fits in the overall -- in the landscape, I guess  
19 I'd say, of asset management and public utilities in  
20 North America and worldwide.

21 MR. JAMES MCCALLUM: Sure. I -- I'd  
22 be happy to. Maybe we can advance to page 11. That's  
23 a bit of a -- a visual. At the bottom of the page, we  
24 see here the same maturity scales going from zero on  
25 the left to four (4) on the right. And we see a

1 variety of companies around Canada and -- and  
2 internationally.

3                   And we see primarily the ones on the --  
4 on the right-hand edge of -- of the scale are overseas  
5 and we -- not shown here but in the text above you'll  
6 read that it says that:

7                   "While the scores may seem low  
8                   compared to a competent standard of  
9                   three (3) it is important to realize  
10                  that many North American utilities  
11                  would rate a zero (0) unaware of  
12                  major asset management system  
13                  requirements or a one (1) aware, but  
14                  not yet developing. Overall Manitoba  
15                  Hydro compares favourably against  
16                  North American utilities in terms of  
17                  its asset management maturity level;  
18                  largely as a result of recent  
19                  progress made, for inst --for  
20                  example, in capital investment  
21                  optimization, C-55, the corporate  
22                  value framework, asset health  
23                  indices, reliability centered  
24                  maintenance and failure curves."

25                  And so, overall, we've made quite a bit

1 of progress in -- in -- across many fronts and we've  
2 been at this for many years. Acknowledge fully that  
3 there are still gaps to go to -- to best practice but  
4 we embrace those gaps. We -- we're much happier  
5 knowing about them and being able to address them and  
6 close them than -- than not.

7                   And as we reviewed this afternoon,  
8 we've got many different initiatives underway to get  
9 that going, including the strategic maintenance plan  
10 and generation that was talked about, the Kinectrics,  
11 our corporate asset management initiative. And so as  
12 much as, you know, we'd -- we'd like -- like to be in  
13 a better place we are where we are and we see a lot of  
14 value in -- in progressing from there.

15                   THE CHAIRPERSON: Thank you.

16                   MS. VAN IDERSTINE: Thank you. And I  
17 had one (1) comment I'd like to address the panel for  
18 consideration.

19                   My Friend the Coalition of -- produced  
20 their book of documents as -- as did the, of course,  
21 the Board panel -- or the Board counsel, and I know  
22 that represents a lot of work to put those things  
23 together because I've had to do it myself. The  
24 difficulty is is that they put these documents in now  
25 as what they're calling exhibits.

1                   You'll recall we had a concern about  
2 the number and the comp -- complexity of the ones that  
3 were presented and the index listed on Friday. This  
4 is a much smaller one that came to the Board today and  
5 -- but even still, not all of the referenced items  
6 were even put to the panel to comment.

7                   And so you've now got a bunch of  
8 documents that been put in, essentially, as an  
9 exhibit. The panel has not had an opportunity to --  
10 to comment on them and, in my submission, they are --  
11 should not properly be before the panel. Even the  
12 ones that the panel have -- this panel had an  
13 opportunity to comment on, you'll recall in particular  
14 with the EPCOR report that they didn't accept that  
15 that report reflected anything that they had any  
16 knowledge about.

17                   So, I'm -- I'm asking your direction  
18 and I would submit that specifically with respect to  
19 documents that weren't even brought to the -- to the  
20 panel's attention, that they be excluded from the book  
21 as an exhibit, and that with respect to those that  
22 they didn't accept the -- the content of that those  
23 ought not to be accepted by the panel.

24                   You need, as you go forward, the best  
25 evidence you can, and this panel and the Manitoba

1 Hydro wants to provide that to you. And I know that  
2 the other Intervenors and the public participation is  
3 extremely important. And when they put it forward and  
4 ask questions, it's important that the answers that  
5 you are provided and the information you're provided  
6 is information that can be assessed and tested  
7 properly. Just as they've tested -- test the amount  
8 of Hydro panels.

9                   So, going back to my concerns about the  
10 book of authorities or the book of documents, I would  
11 ask that those ones that they didn't reference be  
12 removed from the exhibit book and to the extent that  
13 they did not accept any of the -- the reports, that  
14 those also be removed and not be referenced.

15                   THE CHAIRPERSON: Dr. Williams...?

16                   DR. BYRON WILLIAMS: If I might, with  
17 respect in terms of this book of documents, the six --  
18 the first six (6) tabs are expressly on the record  
19 already. They're referenced both directly in the  
20 METSCO evidence with a specific link provided to them,  
21 as well as referenced in the appendix -- appendix.  
22 And they are put there as illustrations of best  
23 practice. So with respect, they're already on the  
24 record.

25                   In terms of the excerpts seven (7)

1 through fifteen (15), those are -- are from either  
2 Board Orders or Board transcripts and are quite  
3 properly before the Board. So, in our client's  
4 position, the submissions of our -- our friend are  
5 without merit.

6           And I would note regardless of, you  
7 know, there were some unpalatable truths perhaps in  
8 these documents from the perspective of Hydro's  
9 witnesses, but those were put forward, tabs 1 through  
10 6 in the METSCO material. We could go through and --  
11 and -- with them ad nauseam. One makes judgments in  
12 the midst -- midst of cross-examination in terms of  
13 the Board's tolerance level for conversations about  
14 sustaining capital.

15           In our view, given that they're already  
16 expressly referenced on the record, there's not an  
17 issue.

18           THE CHAIRPERSON: Ms. Van Iderstine,  
19 we'll take notice of your -- of your concerns and  
20 we'll put forward the position of the Panel at a later  
21 date.

22           MS. VAN IDERSTINE: Thank you.

23           THE CHAIRPERSON: Thank you. Nine  
24 o'clock tomorrow morning. Thank you

25

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(PANEL RETIRES)

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4 --- Upon adjourning at 5:23 p.m

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7 Certified Correct,

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12 Cheryl Lavigne, Ms.

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