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YUKON UTILITIES BOARD  
YUKON ENERGY CORPORATION 20 YEAR RESOURCE PLAN  
APPLICATION TO THE YUKON UTILITIES BOARD

Held at Gold Rush Inn  
Whitehorse, Yukon  
November 15th, 2006  
Volume 3 - A.M. Session  
Page 212 - 314

BEFORE BOARD MEMBERS:

Wendy Shanks	A/Chairperson
Brian Morris	Member
Richard Hancock	Member
Michael Phillips	Member

BOARD COUNSEL:

Renee Marx

BOARD STAFF:

Pat Wickel &	
Dwayne Ward	Technical Consultants
Deana Lemke	Executive Secretary

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2

APPEARANCES:

3

4

Yukon Energy Corporation

John Landry

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David Morrison

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Cam Osler

7

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City of Whitehorse

Wayne Tuck

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10

Utilities Consumers' Group

Michael Buonaguro

11

Roger Rondeau

12

13

Yukon Conservation Society

J. P. Pinard

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TRANSCRIBER:

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Doug Ayers Reporting Services

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23

24

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26

## Preliminary matters

1 (Proceedings resumed at 9:00 a.m.)

2 THE CHAIR: Good morning,  
3 everyone. Just with respect to a couple of  
4 preliminary matters, we will look to adjourn today  
5 around 4:00 p.m., and lunch from 12:00 to 1:30,  
6 mid-morning break around 10:30, and an afternoon  
7 break around 2:45.

8 On another matter, I am not really sure that  
9 there is any significance between the fact that  
10 this weather and the hearing have arrived at the  
11 same time, but in checking the Environment Canada  
12 forecast for the short term, it appears we don't  
13 have much to look forward to in terms of the  
14 weather, anyway.

15 On that matter, Ms. Marx, do you have any  
16 matters before the Board you would like to bring  
17 forward?

18 MS. MARX: I do not, but I understand  
19 Mr. Landry has some -- YEC has some undertaking  
20 responses to file this morning.

21 THE CHAIR: Mr. Landry.

22 MR. LANDRY: Thank you, Madam  
23 Chair. We have three undertakings to file now, and  
24 I think the balance, which I think will be two  
25 more, we will be able to get by the end of the  
26 break, we hope, so that counsel will have them

## Preliminary matters

1 before he finishes his cross.

2 The first one that we would like to respond to  
3 is the issue that arose, Madam Chair, regarding the  
4 contracting policies, you will recall, and that was  
5 an undertaking, just for the record, that is at  
6 transcript page 208. So Mr. Morrison will respond  
7 to that.

8 A MR. MORRISON: Thank you, Madam  
9 Chair. Just in response to a question about, could  
10 we table our contracting policies. I would just  
11 like to advise the Board this morning that in the  
12 2005 Revenue Requirement Hearing, we tabled, in  
13 response to McMahon-YEC-1-72, we tabled 13 of our  
14 policies at that time. Subsequent to that hearing,  
15 those 13 policies, and all of the remainder of our  
16 policies, contracting and purchasing policies, and  
17 guidelines, have all been on our website. So  
18 I have a hard copy here, if someone would like one,  
19 but they are all on the website, and they have been  
20 for over a year.

21 MR. LANDRY: Madam Chair, Ms. Dixon  
22 will provide counsel with a copy, a hard copy, of  
23 both of those documents that Mr. Morrison has  
24 referred to, and if anybody else wants hard copies,  
25 we can get them, but they are on the website.

26 THE CHAIR: Would you like to mark

## Preliminary matters

1 those as exhibits still at this time?

2 MR. BUONAGURO: Sure, we can do that.

3 THE CHAIR: So marked.

4 MR. LANDRY: What would that number  
5 be?

6 MS. LEMKE: B-16.

7 THE CHAIR: B-17.

8 MR. LANDRY: Correction, B-17.

9 EXHIBIT NO. B-17:  
10 CONTRACTING POLICIES.

11 MR. LANDRY: Madam Chair, the second  
12 undertaking related to the near-term non-industrial  
13 load forecast that was being discussed yesterday  
14 with counsel, and just for the record, the preamble  
15 started at page -- approximately page 165, and the  
16 actual question came at page 177, and it related to  
17 the 2.2 percent growth rate in that near-term  
18 non-industrial load forecast, and the reference is  
19 Exhibit B-2, page 24. Mr. Bowman will respond to  
20 that undertaking.

21 And Madam Chair, just for the record, this is  
22 called Yukon Energy, Undertaking Number 1, which we  
23 can give an exhibit to in a second, but we did the  
24 numbering relative to when the undertakings  
25 occurred on the transcript. Mr. Bowman?

26 A MR. BOWMAN: Thank you. The

## Preliminary matters

1 Undertaking Number 1 was to look at the 2.2 percent  
2 number that is used in Exhibit B-2 at page 24,  
3 which was one component of coming to the long-term  
4 average growth rate used in the Resource Plan. And  
5 at that time, the Yukon Energy used a three-year  
6 average recorded increase in consumption, and  
7 "consumption" meaning YECL's wholesale purchases  
8 on the WAF system for firm sales, not secondary  
9 sales.

10 What we have prepared in this exhibit is the  
11 numbers that were used in the Resource Plan to come  
12 to the 2.2 percent, and also more recent actuals  
13 that we have recorded since the time of the  
14 Resource Plan. At the time the Resource Plan was  
15 prepared, full year actuals were only available to  
16 the end of 2004, it was being prepared within  
17 2005. So in the table that has been handed out,  
18 you will see that the numbers are listed on the  
19 left-hand side, and what we have done is put in  
20 bold and italics the numbers that were used in the  
21 Resource Plan for the 2001 to 2004 period, which is  
22 the three year period that was being addressed in  
23 those columns. Column A, that is listed there, is  
24 the WAF firm wholesales which is YECL's purchases  
25 from YEC on the WAF system, and these are in  
26 kilowatt hours.

## Preliminary matters

1           In order to come to YECL's native load, which  
2           is the relevant number for considering the  
3           long-term system, one would add back the amount of  
4           generation YECL provides itself from Fish Lake,  
5           which is listed in column B. So that the third  
6           column there, which is listed as A plus B, is what  
7           we would call YECL's native load. I note that the  
8           table calls it a native peak; it is not a peak, in  
9           a sense of megawatts, it is an overall annual load  
10          also in kilowatt hours, and that is the load number  
11          that represents the total load on the distribution  
12          system on the WAF.

13          The following column shows the annual growth  
14          rates that were experienced during the period we  
15          are looking at, and you can see the reason for  
16          choosing the 2001 as the starting point is that, by  
17          the time the Faro mine closed in 1998, and the next  
18          couple of years, there was a substantial trickle  
19          down through the economy that some people here will  
20          appreciate more than myself, but that ended up  
21          being stabilized by about 2001 and, by that point,  
22          the load sort of resumed to normal type of  
23          patterns. So the bold italicized numbers there  
24          represent the three years that were looked at since  
25          2001; one year of 1.3 percent, one year of 2.4  
26          percent, and one year of 3 percent. And 3 percent

## Preliminary matters

1 is cited in Exhibit B-2, as well, as the highest  
2 annual recorded increase in consumption to that  
3 point. The three year average of those two is 2.2  
4 percent, which is the number that was used in the  
5 Resource Plan.

6 Since that time we have recorded 2005 actuals  
7 and 2006 actuals until the end of October, and  
8 those are included in here, as well as the 2006  
9 forecasts for November and December that Yukon  
10 Energy is using. So that when we add in the full  
11 benefit of the loads we now know, we can see that  
12 the 2005, the impacts of a very warm November and  
13 December in that year, so that the growth was very  
14 modest, and 2006 now is showing the more normal  
15 weather pattern related to the ongoing growth. And  
16 the rolling three-year average is shown in the  
17 final column. So that if we use the updated  
18 information we have to date, the 2.2 would be more  
19 like 2.6 in terms of a three-year average.

20 What we set out in the final right-hand  
21 column, the undertaking requested us to use the  
22 same methodology as we used in the Resource Plan.  
23 The methodology in the Resource Plan was to look at  
24 the period since the Faro mine stabilized, the  
25 longest period of record available which, at that  
26 time, was three years. If we continued that



## Preliminary matters

1 methodology, saying we would look from 2001 until  
2 the best available recent data, that would be the  
3 number shown in the final column. So that the 2.2  
4 percent, which was a three-year average, the  
5 following year, when we built in '05, it would drop  
6 to 1.9, and the year after that, when we build in  
7 '06, 10 months of actuals, it would be up to about  
8 2.3. So it doesn't materially change the  
9 conclusion.

10 And just for the benefit of people who are  
11 fascinated in these type of details, below the line  
12 is -- because 2006, of course, we don't have  
13 actuals through the entire year, and we did not  
14 want to get confused about the extent to which  
15 forecasts for November and December might be  
16 skewing what is otherwise actual numbers, we have  
17 put, at the bottom, just the January to October  
18 period, so that one can compare actuals to  
19 actuals. And it emphasizes the point that we are  
20 setting out above, that the growth that is now  
21 being seen, 7 gigawatt hours of the growth between  
22 '05 and '06 is already in hand, those are sales  
23 already made. And 10 gigawatt hours compared to  
24 2004, or almost 10 gigawatt hours compared to 2004,  
25 those are sales that have already been made, and  
26 they do not rely on any type of forecast. So it's

## Preliminary matters

1 not that the 2006 forecast number up here is  
2 hinging on any particular weather pattern, or  
3 loads, in November or December.

4 Q So could we have an exhibit number, B-18 is that  
5 the correct --

6 THE CHAIR: So marked.

7 EXHIBIT NO. B-18:

8 YUKON ENERGY'S UNDERTAKING #1.

9 MR. LANDRY: And the final one for  
10 first thing this morning is an undertaking relating  
11 to YECL's purchase power forecast for the past  
12 three years, you will recall, Madam Chair, and the  
13 preamble starts at page, I believe, 175, or  
14 thereabouts, and the actual question is at page 179  
15 of the transcript, and Mr. Bowman, I think, is  
16 going to answer that one, too.

17 A MR. BOWMAN: The table that has been  
18 distributed, the package of materials, five pages,  
19 is the information that was requested in regards to  
20 the data that YECL provides to YEC on an annual  
21 basis. The reference was to a letter that YECL  
22 provided to YEC setting out the data that they  
23 provide, and it referenced that, in each year, it  
24 provides a forecast of the current year plus the  
25 following three years, and we were asked to provide  
26 the last three packages. Because we did not have

## Preliminary matters

1 the transcript, we were not perfectly clear if the  
2 last three packages was '03, '04, '05, or also to  
3 include '06, so we put all four in just to make  
4 sure that we have covered the bases. '06, of  
5 course, though, we don't have an actual year to  
6 test against at this point.

7 The front page summarizes the data that is in  
8 the following attachments. The back four pages,  
9 I won't bother to go through, but in each case, it  
10 will set out a fair bit of detail for YECL's  
11 forecast for the current year, and then at the  
12 bottom of the page, the number of future years they  
13 give, and it is not always three, some cases it is  
14 four, and some cases it is two. But this is the  
15 level of data that YECL provides YEC.

16 I will just note that the tables that are  
17 attached are substantively the format provided by  
18 YECL, and we are assured by the people who deal  
19 with YECL on these that they represent all of the  
20 numbers provided, but in some cases, they have  
21 additional notes added by YEC staff who are dealing  
22 with these tables. They are just an Excel file.

23 In order to make it simple, we have summarized  
24 it at the front, and on the front page, if I can  
25 just take a minute to go through, this sheet is in  
26 megawatt hours, and the numbers provided by YECL,

## Preliminary matters

1 in particular in regards to future years, do not  
2 break out WAF versus Mayo-Dawson sales, so the  
3 numbers we are dealing with here are total  
4 wholesales and include WAF and Mayo-Dawson. Now,  
5 Mayo-Dawson is a very small part of these. In the  
6 first couple of years up to about 2005, it is about  
7 250 megawatt hours, so less than .1 percent, or  
8 about .1 percent of what is shown here. Starting  
9 in 2005, Stewart Crossing was connected, so it goes  
10 up to about 750 megawatt hours of these numbers.  
11 It is a very small part, but I wanted to make sure  
12 we had that note. And again, these are firm sales,  
13 not including secondary.

14 What this table shows on the left-hand side,  
15 it sets out the year in question, and the actual  
16 sales recorded, and again for 2006 it is if full  
17 year forecast. For each of the additional columns  
18 is the forecast provided by YECL in the respective  
19 year. So the column entitled 2003 is the forecast  
20 provided by YECL in 2003, and at that time, they  
21 provided a forecast of 223 megawatt hours,  
22 increasing slightly through the following three  
23 years. 2004, you can see they provided an  
24 additional year of data, and 2005, they provided an  
25 additional year, and 2006, we have one less year  
26 than the normal three.

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1           And just to follow across then, the concern  
2           that had been raised at times in regards to these  
3           forecasts, if you look at 2006, for example, actual  
4           sales this year, the forecast for  
5           November/December, are headed for 247 gigawatt  
6           hours. As of 2003, YECL was forecasting 2006 to be  
7           about 225. By 2004, they had raised that forecast  
8           to about 227, and by 2005 they were expecting 236,  
9           and this year's forecast was for 241.

10           So the extent to which this reflects different  
11           underlying factors, be it the big box stores, or  
12           changes in uses of electric heat, would all be on  
13           the other side of the meter, so it is not something  
14           that we can comment on in terms of general service  
15           versus residential. But the type of growth that  
16           has been seen here, again, I am told it won't be a  
17           surprise to anyone who lives in Whitehorse in terms  
18           of housing construction, and a number of other  
19           things that are being seen in this market, and the  
20           extent to which the growth is arising, even though  
21           it is not being forecast in the numbers that are  
22           being provided by YECL.

23           I would just make a final comment that the  
24           undertaking reference, the section in the letter  
25           from YECL that said they provided wholesale  
26           forecasts and actual and forecast Fish Lake, which

## Preliminary matters

1 we were asked for as well ... I provided the actual  
2 Fish Lake data in the previous exhibit. That is  
3 data that YEC has gone to the Water Board to get.  
4 Going through the information available, YEC is not  
5 routinely provided Fish Lake actuals or forecasts.  
6 On occasion, it asks for them and isn't provided  
7 them, on occasion it is provided, but it is not a  
8 consistent part of the information provided.

9 MR. LANDRY: Madam Chair, can we  
10 have an exhibit number for that, please.

11 THE CHAIR: B-19, so marked.

12 EXHIBIT NO. B-19:

13 YUKON ENERGY'S UNDERTAKING #2.

14 MR. LANDRY: I would only reference,  
15 Madam Chair, for the record, the letter that was  
16 mentioned yesterday from YECL-C1-5 where there are  
17 some comments, I guess is the best way to call  
18 them, because I cannot think of any other way to  
19 describe them, by YECL in their letter of  
20 withdrawal, relating to forecast.

21 Those are all of the undertaking responses  
22 that we have at this point. There are two more, as  
23 we understand them, and we are hopeful to have them  
24 after the break this morning.

25 THE CHAIR: Thank you, Mr. Landry.

26 Mr. Buonaguro, are you prepared to proceed?

YEC Panel  
Buonaguro (Cr-ex.)

1 MR. BUONAGURO: Yes, thank you.

2 YEC PANEL FURTHER CROSS-EXAMINED BY MR. BUONAGURO:

3 Q MR. BUONAGURO: And thank you for  
4 getting back to us so quickly. I am moving on to  
5 the specific four project proposals that are part  
6 of the Plan, and I do not expect to be too, too  
7 long, actually.

8 With respect to the Aishihik Third Turbine  
9 Project, I really only have one question. We  
10 understand from the evidence that the project was  
11 approved for environmental -- it had its  
12 environmental licensing approved as of 1992, and it  
13 is all ready to go. Is that correct?

14 A MR. MORRISON: Hector can give you the  
15 details, but it is a water licence.

16 Q Okay.

17 A MR. CAMPBELL: Yes, the 1992 date was  
18 likely the date that we started the application to  
19 bring forward -- or to renew the water licence with  
20 some amendments, and in fact, the process was  
21 completed -- let me just get it out -- in 2002, and  
22 it was a 17-year licence, but that licence does  
23 include the approval to construct the third turbine  
24 for up to 7 megawatts capacity.

25 Q I think I understand. So you are saying that, from  
26 2002, you have 17 years to build it under the

1 current approval?

2 A No, the current renewal period of the licence is  
3 for 17 years.

4 Q Starting?

5 A 2002.

6 Q Starting 2002. Is the licence current -- my only  
7 concern is whether or not there's changes in the  
8 licencing criteria since the time it has been  
9 licenced. So you started the process back in the  
10 1990s, licensed in 2002, presumably with respect to  
11 meeting whatever criteria you had to meet as of  
12 2002. I actually don't know if things have changed  
13 since 2002. Do you know, is it grandfathered to  
14 whatever the existing was in 2002, and if there is  
15 changes between then and now; or when you actually  
16 do the project, are you obligated to update what  
17 you do to meet changing conditions?

18 A No. The water licence that was renewed in 2002 was  
19 under the CEAA legislation, which, in the Yukon,  
20 has now been replaced by the YESAB process, and in  
21 fact, that is the process the utility would likely  
22 have to pursue in 2019 upon the subsequent renewal  
23 of that licence. But, no, there is no requirement  
24 to -- just because there has been new legislation  
25 put in place, the terms of the water licence are  
26 current, then.



1 Q All right, thank you.

2           Moving on to the Marsh Lake project, you  
3 answered some questions about this, but I just want  
4 to be clear. As I understand the update and your  
5 earlier evidence, the reason it has been taken off  
6 of the table, so to speak, is because consultatives  
7 resulted in a lot of opposition, and that  
8 opposition meant that the process of obtaining the  
9 proper approvals would be prolonged; is that a fair  
10 assessment?

11 A MR. MORRISON:                   That is correct.

12 Q But I also understand, and there is no mention of  
13 any specific evidence brought forward by any  
14 specific consultative group, that actually shows  
15 that you would fail at the licensing, it is just  
16 the drawn-out nature of the licensing that takes --  
17 it is not an increased possibility that you are  
18 going to lose because there is some factual reason  
19 why it should not be approved.

20 A The Marsh Lake project, through the consultation  
21 process, is very evident to us that nobody was  
22 going to be going through any regulatory processes  
23 in any great hurry, and there are two very  
24 significant processes, the Water Board, and the  
25 YESAB process.

26           One of the advantages to Marsh Lake, if it was

- 1 possible, was that it could be done -- that it  
2 needed to be done fairly quickly. The YESAB  
3 process can be a process that you can go through,  
4 you know, fairly efficiently, or it could take two  
5 and three years to go through. And we have been  
6 through lengthy regulatory processes, at the Water  
7 Board level, particularly, that have cost millions  
8 of dollars, and we are not prepared to address that  
9 issue, at the moment, for a 1.6 megawatt project.
- 10 Q So you are actually projecting that -- the original  
11 proposal, I believe, said that you anticipate the  
12 licensing process would be no more than \$1  
13 million. Are you projecting the actual cost of  
14 licensing being significantly higher than that?
- 15 A Well, we are not projecting it at all, because we  
16 are not doing it.
- 17 Q I understood, though, you seemed to be suggesting  
18 that, now that you know that there is going to be a  
19 lot of opposition, that that would somehow go  
20 higher?
- 21 A That was one of our concerns.
- 22 Q Can you identify how much money was spent on the  
23 process for Marsh Lake up to date, up to the point  
24 that you terminated it?
- 25 A Well, we went out there and had two public meetings  
26 at Marsh Lake, we had a public meeting at Carcross,

1 and we had a public meeting at Tagish.

2 Q I think that is another way of saying "negligible"?

3 A Yes. And, you know, coffee and doughnuts. And  
4 there is an IR filed on this information anyway,  
5 but we will get you a reference, if you would like,  
6 but it is negligible.

7 Q And do you not see any value in having the project  
8 available in the next 20 years, much like I  
9 understand the Aishihik Turbine Project has been  
10 available since 2002?

11 A No, Mr. Buonaguro, I do not see any value in going  
12 through a process, at this time, that we don't  
13 think we have a lot of -- the chance of success  
14 with. We have a lot of other work to do, and this  
15 would take a great deal of our time, if we are  
16 going through a lengthy regulatory process, and I  
17 do not think it is worthwhile doing at this time.

18 Q You mentioned chance of success, and as  
19 I understood it, there wasn't actually anything new  
20 in the information about the prospect of getting it  
21 actually licensed, it was rather the time  
22 involved.

23 A Well -- sorry.

24 Q So are you saying that the actual chance of success  
25 has actually been impacted, the actual factual  
26 elements have changed, or is it simply --

- 1 A No.
- 2 Q -- the fact that it is drawn out?
- 3 A It is drawn out.
- 4 Q Okay. Exhibit B-3, which is the supplemental
- 5 material to the Resource Plan, at Tab 3, page S3-2,
- 6 this -- at S3-1.2, right at the top of the page, it
- 7 refers to a study to update specific knowledge of
- 8 the hydrology of the Southern Lakes region. And as
- 9 I understand it, there is a larger study, and from
- 10 what I am reading here, the Marsh Lake Fall/Winter
- 11 Storage was an aspect of that study. Am I correct
- 12 in my understanding?
- 13 A Well, you could look at it -- the projects are
- 14 inter-linked to a certain extent. If we were
- 15 proceeding with Marsh Lake Fall and Winter Storage,
- 16 the hydrology study would incorporate some aspects
- 17 of the work that needed to be done regarding the
- 18 Marsh Lake project. There is still, in the
- 19 Southern Lakes, a watershed, there are still some
- 20 areas that we think are worthwhile doing some
- 21 hydrological work on for future benefits and future
- 22 projects. The difficulty, of course, will be, now,
- 23 those projects and that hydrology will have to be
- 24 related to projects that do not require flow or
- 25 storage in the Marsh Lake area.
- 26 Q So you are actually taking -- you are still doing

1 the study, I understand it?

2 A We will do a limited -- not the same version of  
3 hydrology that we would have contemplated by doing  
4 the Marsh Lake storage, as I said, if it was  
5 included. But there are some potential prospects  
6 in the Southern Lakes watershed, in addition to  
7 Marsh Lake, that we will look at.

8 Q Now, my instinct tells me that if you are doing a  
9 hydrology study anyway, it may be useful and cost  
10 efficient to include scenarios that include the  
11 Marsh Lake storage even though you are not  
12 proceeding with it now. Do you have a sense of  
13 difference in cost if you were to include --  
14 continued to include --

15 A No, Mr. Buonaguro, I do not. And your  
16 instinct might tell you that. My instinct tells me  
17 that I do not think we should be wasting money  
18 doing a study on an area that we are not going to  
19 advance at this point in time.

20 Q So your answer is, you don't know what the cost  
21 would be?

22 A I don't know the difference in the cost, no.

23 Q Thank you. Turning now to the Mirrlees updates, or  
24 Life Extension Project. In the original Resource  
25 Plan, and you do not have to turn this reference  
26 up, but it is at B-3, Tab 1, S1-2, there is a short

1 reference which says that NTPC recommends that YEC  
2 not retain the units. Then, if you go to page 44  
3 -- sorry, let me get the exact reference here. It  
4 is UCG-2-42, Attachment Number 1. It is a very  
5 long report from NTPC, page 44. It is the  
6 recommendations from NTPC, a summary of the  
7 recommendations. Do you have that?

8 I can read it to you.

9 A MR. MORRISON: Perhaps you can just  
10 give us the reference again.

11 Q It is UCG to YEC-2-42, Attachment 1.

12 A MR. CAMPBELL: What page number?

13 Q 44 of 95. All right?

14 And the second paragraph from the bottom, it  
15 begins to explain the recommendation, and I will  
16 just read it for the record:

17 "It is strongly felt that it would not  
18 be in the best interest of YEC or its  
19 customers to spend any more money on the  
20 existing Mirrlees units. The units have  
21 served their purpose and are now arguably  
22 at the end of their useful life. Despite  
23 assurances and promises from the OEM (OEM  
24 agent) that the units can be economically  
25 rebuilt and continue in service, it would  
26 not be money well spent. Regardless of

1 the questions surrounding whether, in  
2 fact, the units can be rebuilt, it is  
3 still 40-year-old technology. The units  
4 are not fuel efficient relative to modern  
5 diesel units especially when operating on  
6 like fuel. The units have an earned  
7 reputation of leaking fuel, oil and  
8 coolant resulting in a continuous  
9 environmental concern/liability. These  
10 units require constant attention and  
11 maintenance. This is not likely to  
12 change significantly after the rebuilt.  
13 If these units are rebuilt, YEC will have  
14 spent upwards of 8.2 million and not  
15 significantly improved its present-day  
16 position, nor be in any better position  
17 to meet future load growth within the WAF  
18 system."

19 I think you touched on your response to this  
20 recommendation in your evidence, but it would be  
21 useful to us to have a more fuller explanation on  
22 the record why this recommendation doesn't apply,  
23 or why you think it doesn't apply to YEC.

24 A MR. MORRISON: Thank you. Madam  
25 Chair, this issue and this subject have been  
26 probably one of the most difficult decisions that I

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1 think our management team and our advisors have  
2 been through in the last little while.

3 I think, first off, one major difference  
4 between, I think, what the NTPC staff were telling  
5 us in their recommendation here is, looking at  
6 these -- the difference between what they are  
7 talking about and what we are talking about is the  
8 difference between using these engines as base load  
9 engines, and using them in a back-up capacity. And  
10 this difference has also, I think, been a difficult  
11 concept for us to get our heads around as well.

12 When we look at the capacity planning  
13 criteria, when we look at what we need on the  
14 system to meet the peak load in the winter, I do  
15 not see any way that we can do it without having  
16 that 11 megawatts of capacity on the system in a  
17 back-up situation. And I am going to be very, you  
18 know, rough in my estimates here, but 11 megawatts  
19 at \$1.2 or \$1.1 million a megawatt, to buy new, is  
20 upwards of \$15 million. We looked at these three  
21 Mirrlees engines, and we did a great deal of due  
22 diligence in terms of whether or not we could get  
23 parts, whether or not we could have some certainty  
24 around continuing to get parts well into the  
25 future. We have documents, we have records from  
26 the original equipment manufacturer that gives us



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1 those assurances, we have visited with them to  
2 ensure that we understood clearly how they were  
3 going to provide parts on an ongoing basis, and  
4 service, from their technical expertise.

5 If we can refurbish these engines ... and what  
6 we are talking about doing is called a 12,000 hour  
7 overhaul, which means that the engines, after that,  
8 should have 12,000 hours of life in them. Well, if  
9 we run them 100 or 200 hours a year, in a back-up  
10 capacity, that is a lot of years of life, compared  
11 to spending \$15 million for engines to do the exact  
12 same thing; sit there for years at a time, only  
13 running maybe 100 or 200 or 300 hours a year, in a  
14 back-up capacity.

15 So our difficult decision, and we hired -- you  
16 will see, in the B.C. Hydro Report that was  
17 mentioned earlier, that B.C. Hydro said that these  
18 engines should be retired unless you spend some  
19 money on them. So they have said, you should  
20 retire these engines, do not spend any money on  
21 them. We have another opinion that says there is  
22 nothing -- there is no reason that you cannot fix  
23 these engines.

24 We have taken the extraordinary step of taking  
25 one of these engines -- the manufacturer told us a  
26 further step, that would give us comfort, would be

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1 to pull the cylinders and have a look at them, and  
2 that would tell us whether or not there was  
3 significant wear and damage. We have done that.  
4 We have done, I think, everything we think we can  
5 do to make sure that we know that, when we fix  
6 these engines, they are going to work, and they are  
7 going to work for a considerable period of time  
8 after they are fixed, not just a year or two  
9 years. We are looking at these as engines should  
10 be there for, you know, a 15-year period, you know,  
11 somewhere in that neighbourhood. Now, it depends  
12 on how much they get run.

13 The question is, is a difference between base  
14 load and back up, and right now these engines,  
15 through our Plan, are designated as a back-up  
16 facility, and I think that is the difference.

17 Q Thank you. Just one aspect of it, which I do not  
18 think was specifically addressed, was the statement  
19 that it is a continuous environmental concern or  
20 liability. Could you address that particular?

21 A No, I do not think the engines are a continuous  
22 environmental liability. They leak a little oil,  
23 they are -- that oil is collected in the plant, it  
24 doesn't go outside the plant. It is within the  
25 shop. I do not think we have an environmental  
26 liability with those engines, specifically.

1 Q Did somebody want to add to that?

2 A No.

3 Q I just have, actually, one more question on the  
4 Mirrlees?

5 A Sure.

6 Q And I think part of your answer has already been  
7 said, but I might as well ask the question. The  
8 report, that same report, talks about the fuel  
9 efficiency of new units as opposed to the old?

10 A Sure.

11 Q Can you comment on that? I do not know if you have  
12 the numbers, for example, of how -- I guess there  
13 would be projected fuel savings in addition to  
14 increased megawatts if you had new units?

15 A Yes. Two things, and I will let, you know, either  
16 Mr. Osler or Mr. Campbell jump in on this one, but  
17 again, the total cost -- there is no doubt that you  
18 can buy more fuel-efficient engines, but they would  
19 be new engines. And again, we are not running  
20 these engines as base load. So if we are going to  
21 run them only a few hundred hours a year, there is  
22 no fuel efficiency to be earned here. It is not  
23 any significant number at all. And the difference  
24 between getting a fuel-efficient engine and not  
25 running it, and spending, you know, double the  
26 money on the capital side of things, there is no

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1     payback there at all, by any stretch of the  
2     imagination.

3    Q   Thank you.  Moving, lastly, to the Carmacks-Stewart  
4     Line Proposal, which will probably be a little  
5     longer than the previous three.  In reviewing the  
6     proposal, you talk about a \$10 million  
7     interconnection benefit, for example, to the  
8     ratepayer, and a portion of that is approximately  
9     \$5 million in displaced fuel savings, diesel fuel  
10    savings, projected out to 2025.  It occurred to me,  
11    in looking at that, that there should be an  
12    accounting for operation and maintenance costs  
13    incurred as a result of the line as well, and that  
14    these would also be projected out into the future  
15    of the life of the transmission line, and I did not  
16    see that being accounted for in either the original  
17    proposal or in the update.  Have you accounted for  
18    O & M costs related to the new line, and then  
19    worked that into the cost/benefit analysis?

20   A   MR. OSLER:                             I will let Mr. Bowman  
21    elaborate, if he thinks he has something to add.  
22    Generally, the answer is no, at this stage in the  
23    work.  The types of estimates that we would be  
24    putting in there for the fuel savings would be  
25    pretty simple, and we have not got the basis for  
26    getting a comparable level of -- getting the level

1 of detail at this stage that you get into. And  
2 transmission costs, operating costs, as such, are  
3 very low in number, which start off at a very  
4 minimal level, and then climb as the years go on.  
5 At some stage, we would certainly have to get into  
6 that level of detail, but I believe in terms of  
7 this interconnection level of thinking, we have not  
8 done that at all yet.

9 Mr. Bowman, do you have anything to add?

10 A MR. BOWMAN: No.

11 Q So there is a number in there, you don't know what  
12 it is, but you think that it is low?

13 A MR. OSLER: It would be a very low  
14 number. It would not materially affect what we are  
15 trying to deal with. The uncertainties, with  
16 respect to the number you are looking at, are in  
17 estimates based in the original B-1 report, based  
18 on the load assumptions, on the Mayo-Dawson and the  
19 WAF systems, that are noted in that report, as what  
20 surplus hydro would be available on the Mayo-Dawson  
21 system, assuming there is no new mines. And each  
22 year, that number goes down a little bit because of  
23 normal load growth. It would go down a whack if  
24 the United Keno Hill Mine came on. Hold that  
25 thought.

26 The second thing that is affecting the value

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1 of the interconnection, for energy savings, is the  
2 load on the WAF system. In its simple language,  
3 you are going to save a lot more money if the  
4 connection occurs when you have the two mines on,  
5 as well as the load on the -- the non-industrial  
6 load on the WAF system. Our operating assumption  
7 back then was, you would not probably see the  
8 Carmacks-Stewart line without at least one of the  
9 mines, and I think our operating assumption today  
10 is you would not see the full connection without  
11 both mines, just as a practicality.

12 So on that basis, the load on the WAF system  
13 would be high enough to have a need, a use, for  
14 that surplus on the Mayo-Dawson system, to displace  
15 diesel generation on the WAF system, and you would  
16 make the savings. If we get to the next level of  
17 refinement of this, there would be extra costs for  
18 the diesels operating, and everything else, on the  
19 WAF system, that we have not brought into account  
20 by just looking at a very simple calculation,  
21 largely based on fuel, and there would be an offset  
22 that would not be very material, in present value  
23 terms, for the operating costs of the Mayo-Dawson  
24 system. It would be a very small percentage, from  
25 our experience -- for the Carmacks-Stewart system,  
26 sorry. It would be a very small effect on the

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1 overall calculation that we are talking about, and,  
2 in the realm of the uncertainties and issues I am  
3 dealing with, would be inconsequential at this  
4 stage, so it is just not worth getting into that  
5 level of detail.

6 Q Related to that, in terms of the fact that the  
7 benefits are projected into the future, but the  
8 costs are borne up front and then, presumably,  
9 rolled into rates in one form or another, I did not  
10 see anywhere an annual breakdown of how the costs  
11 versus the benefits track in the years. So I would  
12 expect that the costs, to some point, would be very  
13 high in the beginning years, and then taper off, or  
14 the benefits would taper off -- well, I don't know  
15 exactly how it is going to work. But the costs and  
16 the benefits are described in the Plan as all  
17 happening at once, being reduced to present value,  
18 but in reality the costs and the benefits are  
19 experienced over the course of a number of years,  
20 and either fluctuate, go up or down, based on how  
21 they are treated either in rates, or in how the  
22 benefits are actually realized, and it would be  
23 very helpful to see how that tracks based on your  
24 analysis. Can you provide that information, how  
25 your current cost/benefit analysis tracks on an  
26 annual basis?

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1 A MR. OSLER: The short answer is, we  
2 can provide you the assumptions that were used to  
3 calculate the present value of the energy savings  
4 in terms of a distribution of megawatt hours in  
5 different years. I would have to track down that  
6 number, wherever it is, but we could get you that,  
7 because there would have to be a number for it.

8 In Appendix C of the initial B-1 filing, there  
9 is a case, at the very end, that shows the annual  
10 numbers on the WAF system, with Marsh Lake,  
11 Aishihik Third Turbine and Carmacks-Stewart  
12 integration. So those set of numbers are out of  
13 date only because we don't have Marsh Lake as part  
14 of the Plan anymore, but they are sort of an  
15 indicator of the types of numbers we were using at  
16 the time we did the Plan.

17 If I could, I would make -- your question had  
18 a long preamble about, it would be nice to see, and  
19 we don't see it, and maybe it would look like  
20 this. I would not mind commenting on that, if you  
21 are interested.

22 Q I am afraid to invite you to comment, the way you  
23 prefaced that, but I guess it cannot do too much  
24 harm.

25 A I think we have seen, in the Aishihik Third Turbine  
26 or the Mayo-Dawson analysis that we've provided, a



1 standard set of tables that show cost by year, for  
2 the project in question, and savings by year, for  
3 not running diesel. And we have been able to do  
4 that because of the nature of those projects, and  
5 they have been instructive to the Corporation in  
6 assessing cost/benefit, in general, what we call  
7 economic analysis, and then we have run the  
8 analysis on a financial basis to show potential  
9 rate effects year by year.

10 This type of analysis is filed in this  
11 hearing, in Appendix C, for the Aishihik Third  
12 Turbine under a variety of cases. And you have the  
13 first table for each case is an economics table,  
14 and the second table for each case is what we call  
15 a rate impact table, and they completely parallel  
16 the information we gave the Board in the hearing  
17 last year, with respect to Mayo-Dawson. There are  
18 many projects where that type of analysis is useful  
19 and we're able to provide it.

20 In the case of the Mayo-Carmacks-Stewart  
21 project, at the stages we have been going through,  
22 we faced a different type of situation. The  
23 project intrinsically, when we started to look at  
24 it, is not something that was going to generate  
25 enough savings to warrant its being developed. It  
26 would depend, we started off on the assumption, on

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1 government funds, so it would have -- basically, if  
2 it was fully funded by the government, would have  
3 zero costs and would generate the benefits. Our  
4 job was to show what type of benefits this might  
5 generate. And it was clearly, without the mine  
6 loads, not something that the Corporation would  
7 undertake on its own. The benefits were clearly  
8 well below the costs.

9 As we have progressed, we have gotten into  
10 more and more analysis of what might the mines be  
11 able to do, how might we proceed with this project  
12 in a way that would manage risks, and so the focal  
13 point has become not so much how we can save money  
14 running diesel, but how we can capture money from  
15 the mines, either in terms of commitments up front  
16 or in terms of ratepayer benefits. It is a  
17 different style of analysis.

18 Again, it does lead to an annual set of  
19 numbers that we are using, but it is more for the  
20 Stage 1 analysis of that project from Carmacks to  
21 Pelly Crossing, what it would yield in terms of  
22 annual benefits and present values, and we can  
23 certainly provide you with back-up on those.

24 The interconnection that is the Stage 2, going  
25 from Pelly to Stewart, is clearly something, at the  
26 moment, we still think would need a likelihood of

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1 government funding. It would certainly need the  
2 Carmacks Copper mine in place for us to take it  
3 seriously, and it would continue to bear the risks  
4 I just mentioned, when we looked at it: "Where is  
5 the United Keno Hill Mine at?", would be an  
6 important question.

7 Frankly, that part of it is another type of  
8 analysis from the more clear analysis we are now  
9 developing for Stage 1, with the clarity of the  
10 Minto mine being developed, and the clarity of what  
11 we are trying to negotiate and finalize an  
12 arrangement with them for a PPA. That starts to  
13 get us back into, here is a stream of annual  
14 numbers of loads that these people would use, what  
15 they could save compared to their diesel cost, what  
16 we could charge relative to our Rate 39 and fair  
17 share of costs for this line. It is a more  
18 complicated analysis, it is more difficult, it  
19 takes more time to think it through. It is still  
20 easy compared to what we might face in five years  
21 time if somebody came along with a brand new mine,  
22 and we had to worry about generation being  
23 developed at the same time we are doing  
24 transmission. So it is a good first step in trying  
25 to get our mind around things.

26 But the type of analysis we used for

1 Mayo-Dawson, or we used for Aishihik Third Turbine,  
2 is not necessarily something we can always just  
3 pull out of a hat for each project to come up with,  
4 I guess, is my short comment, and it doesn't  
5 necessarily follow the patterns that we used for  
6 Mayo-Dawson, where the cost of the project, yes,  
7 tend to go down over time, and the benefits go up,  
8 but they do it for quite different reasons, quite  
9 different manner.

10 Q Thank you for that. Two points for clarification,  
11 you said early in your answer that, originally, the  
12 project depended on government funding, so that  
13 there would be zero costs to ratepayers. That  
14 doesn't mean that there would be zero costs to  
15 taxpayers; I just want to make that clarification.  
16 Is that a fair comment on that?

17 A Yes, I agree with that.

18 Q And the second point is that, I understand what you  
19 were saying in your answer, but you do have a  
20 specific scenario in your proposal which you are  
21 putting forward for review, and the review -- the  
22 proposal includes an assumption about the yearly  
23 consumption of the mines, which has been compressed  
24 up front into a single value, for each of the two  
25 mines. It includes an assumption with respect to  
26 the costs, which would be rolled into rates in a

1 very particular way, which would then have an  
2 effect over time. And you have a specific  
3 assumption with respect to ratepayer benefits,  
4 which are presented in a lump sum up front but  
5 actually are calculated on a yearly basis. And I  
6 would think that you can, for my benefit, so that I  
7 can understand how that plays out over time, your  
8 proposal, which I know is based on assumptions --  
9 how that plays out in terms of rates. So I am  
10 basically asking for that information in an  
11 undertaking.

12 A You expanded your request to the mines, and that is  
13 fine.

14 Q Actually, I think -- I was asking for the cost and  
15 benefits, and the benefits -- the example I used  
16 was the fuel savings, but one of the benefits that  
17 is presented to the Board, in terms of offsetting  
18 the cost, is the input from the mines, which is  
19 something which occurs over time. So, in fairness  
20 to me, I do not think I changed my answer, but I  
21 think you were focused on my example.

22 A Yes, that is fair. We can get you -- let me look  
23 at what we can quickly provide you. The key  
24 assumptions for the mine load levels are all in  
25 each stage of our reporting, including the update,  
26 so that somebody would know what level of load we

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1 were assuming for at the mines, and what years we  
2 were assuming, but if I can find a way that we can  
3 give you a table that lays it out simply so you can  
4 follow it. The only thing I am not as sure about,  
5 because I have not looked at for a long time, is  
6 the numbers from the original document, on the  
7 interconnection savings, and that is what I was  
8 focused on when I was responding to you earlier.

9 Q I think you are understanding what I am asking for,  
10 and I think we can maybe work out the details on  
11 the break, or something like that, if there needs  
12 to be clarification.

13 A Yes, I just need to see what I can get you  
14 quickly.

15 Q All right.

16 A Thank you.

17 Q Now, you mentioned, in one of your earlier answers,  
18 that there was originally a pre-condition to  
19 starting the project that the Yukon Government  
20 provide funding, correct me if I am wrong, I think  
21 it was in the order of 10 to \$15 million, I think  
22 it was 10. I cannot remember the exact figure.

23 A If you look at the January B-1 exhibit, I think,  
24 technically, we always said we would need to make  
25 sure that ratepayers would never have a net adverse  
26 effect, and it would have to be made up from the

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1 mines and government. But bottom line, when we  
2 started this exercise at the beginning, we thought,  
3 at that stage, that it would be basically  
4 government for not just 10 or 15 million, but for  
5 maybe 30 million, the whole thing.

6 Q All right.

7 A And by the time we got to the supplementary  
8 material in June, we made a submission to  
9 government where I think the number had gotten to  
10 10 million from the government, 5 million for Stage  
11 1 and 5 million for Stage 2, based on our new  
12 information about the mines. The update that we  
13 have just filed is setting out a game plan to do  
14 Stage 1 without any government funds, but with a  
15 YDC contribution of 5 million.

16 Q I think you have anticipated what was actually my  
17 question, which was an explanation as to why there  
18 is no need, at least for Stage 1, with respect to  
19 government funding. I think the updated proposal  
20 is silent with respect to Stage 2, or potential  
21 further need for government funding. Can you  
22 comment on that?

23 A Yes. Stage 2 has all of the risks, certain issues  
24 that I just laid out for you, so we are being very  
25 cautious about our ability to -- stating Yukon  
26 Energy's ability to do Stage 2, given those

1       uncertainties. We can certainly envisage scenarios  
2       where it would be dependent on the 5 million type  
3       of number we were talking about earlier, from the  
4       government, for Stage 2.

5               On the other hand, if Carmacks Copper hooks up  
6       and everything is working fine, and United Keno  
7       Hill is not around, coming back on the system,  
8       maybe the world would get better, and we could look  
9       at Stage 2 more optimistically. So we are cautious  
10      in our statements, at the moment, about Stage 2,  
11      but we are certainly not standing up and saying  
12      Yukon Energy could do Stage 2, for sure, without  
13      government funding.

14             The President is sitting beside me, and he has  
15      to deal with the Board of Directors, I am just the  
16      consultant.

17 Q I hesitate to use the word "elimination", but the  
18      removal of the requirement for government funding  
19      in Stage 1, and the prospects for the need for  
20      government funding in Stage 2, both of them are  
21      entirely dependent upon what happens with the  
22      mines, in terms of what their contributions are  
23      going to be, and how the risks of the costs are  
24      being borne or not borne by the mines. Is that  
25      sort of a fair summary of what you have just said?

26 A No. And I can explain if you like.



1 Q Yes, please.

2 A There are two different issues when you are dealing  
3 with the mines. One of them is having a security  
4 that we are going to capture the benefits that we  
5 estimate if the mines are around. So if I have a  
6 mine here for ten years and we sell them this much  
7 power, and we sell them at a rate the Board has  
8 approved, and we have worked out exactly how they  
9 would pay for their portion of the line, and all of  
10 those types of good things, the first question we  
11 anticipate being asked is, what happens if the mine  
12 doesn't last the ten years, only lasts five years?  
13 That is called a security question, as distinct  
14 from a estimated flow of benefits. Okay?

15 So we are very conscious that we have to  
16 address the security question with respect to the  
17 mines, if we are going to talk about relying on  
18 their benefits for the purposes of financing these  
19 lines, and I can address that more if you like.

20 In terms of the flow of benefits, bringing on  
21 stream the Carmacks Copper mine, at almost 50  
22 million kilowatt hours a year of extra load,  
23 produces material benefits, if you can believe the  
24 security that it will be around for 8 1/2 years,  
25 that add, overall, to the Carmacks-Stewart line's  
26 benefit, Stage 1, et cetera, materially. That is

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1 the type of thing that gives us extra ability to  
2 talk about doing a Stage 2 without, overall, having  
3 an adverse rate impact on Yukoners.

4 The thing we are most worried about, at that  
5 stage, is whether or not the energy that we are  
6 assuming is there from Mayo-Dawson is really there,  
7 or whether there are some things happening up in  
8 Mayo-Dawson that have used that energy for some  
9 other purpose, such as United Keno Hill Mine. So  
10 that would be the biggest effect of the thing. No  
11 matter how we do it, we have to make sure, before  
12 we hook up either mine, we need to address the  
13 security question in order to support the numbers  
14 we are using to do our analysis.

15 Q I am interjecting with an out-of-sequence question  
16 here. I mentioned before about having determined  
17 that you projected the displaced fuel savings, as a  
18 result of interconnection, out to 2025. That level  
19 of specificity is not in the record with respect to  
20 the Pelly Crossing \$2.1 million savings. Can  
21 I assume it is the same, you have reduced -- the  
22 present-day savings for Pelly Crossing, for  
23 displaced diesel, is 2.1, I guess, net. Is that  
24 also as a projection out to 2025?

25 A There is a note in one of the supplementary  
26 filings, I believe, of the calculation and the

1 dates, and the discount rate, it takes it out to  
2 the year 2020, assuming that the WAF system is on  
3 diesel, by that time, under the base load  
4 situation. Again, we could refine that as time  
5 goes along, but it is a concept of saving diesel.  
6 If we are going to be on a system that doesn't have  
7 a surplus, we did not want to give it a credit.

8 Q Small point.

9 I want to confirm some of the specifics of the  
10 proposal. As we understand it, under all scenarios  
11 where you are connecting a mine, the mine is  
12 responsible for the full cost of the 35 kilovolt  
13 line between the mine and a certain point, the  
14 interconnection point, I guess. Is that true, do  
15 you want to qualify that?

16 A If we are dealing with the Minto mine, it is true.  
17 If we are dealing with the Carmacks Copper mine,  
18 they don't have a 35 kV line. So the concepts go  
19 like this: if we are dealing with the  
20 Carmacks-Stewart line, as we define it, it is the  
21 line that goes from Carmacks, through Pelly, up to  
22 Stewart. We then talk about spur lines. They are  
23 the lines that come off that Carmacks-Stewart line  
24 to go to a mine. Minto mine would have the Minto  
25 spur line of about, we used to say 30 or so  
26 kilometers, now it is about 27, I believe. That is

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1 a 35 kV line, given the load of the Minto mine.  
2 And Carmacks Copper would be about an 11 kilometer  
3 spur, it would be 138 kV, given the magnitude of  
4 their load, and they would be totally responsible  
5 for it, on the principle that they are the only  
6 customer using the line.

7 So bottom line, any mine connecting to the  
8 system, including these two mines, on a line that  
9 is solely for their use, would be totally  
10 responsible for all actual costs of the line  
11 construction, and decommission.

12 Q Then, from going beyond that spur point and then  
13 connecting it to the actual grid, which is part of  
14 the Carmacks Transmission Proposal, I understand  
15 that -- I think there are some estimates in the  
16 original proposal for what the contributions would  
17 be from the mines, and how it would work. I  
18 understand, in the update, you have removed that in  
19 order to present the proposal without reference to  
20 particular contribution, in view of the PPAs are  
21 still being negotiated. I think that is one way of  
22 characterizing it.

23 What is the proposal? Is it the proposal to  
24 have the mines contribute an amount to the rest of  
25 the connection that is in line with what they would  
26 have had to spend if it was just them, or is there

1 some other proposal being worked on?

2 A Your characterization of the change in the update  
3 from earlier is fair, for the reasons you gave. So  
4 my answer is constrained, for the reasons of the  
5 update, in the sense of a negotiation process.

6 In discussions with either mine, as we laid  
7 out in our June submission, and in the answers to  
8 earlier questions, we have certainly made the  
9 point, if you had to be totally responsible for  
10 building the line you need from Carmacks, would it  
11 make sense, relative to the cost that you would  
12 incur running diesel, since both of these mines are  
13 seeking licences or have licences, in one case they  
14 are actually proceeding to be built and will start  
15 operating on diesel? In the other case, Carmacks  
16 Copper, they are seeking a licence, all of their  
17 applications before any regulatory body assume the  
18 mine will be run on diesel. Whether that makes  
19 sense or not, I am not going to comment, but that  
20 is their formal applications. In the case of  
21 Minto, it makes abundant sense, that is how they  
22 got their \$85 million worth of financing. The  
23 market is great, and even if the costs of diesel  
24 fuel are high, they can make it work.

25 So in each case, we have looked at the  
26 economics, from their point of view, of providing

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1       them with a 138 kV line from Carmacks, or a 35 kV  
2       line from Carmacks, and would it make sense? Would  
3       it pay for them to do that? And the answer in each  
4       case has been resoundingly yes, and, for the bigger  
5       mine, very much so. Okay?

6               That doesn't mean the mine is automatically  
7       desirous to pay what they would need in order to  
8       meet my scenario. They might do it if we were not  
9       building a Carmacks-Stewart line, they might not,  
10       depending on their frame of mind. Mines have a lot  
11       of other things to think about than worrying about  
12       electrical infrastructure. If they don't need it,  
13       they don't need it. If they can save some money,  
14       it is nice, but it doesn't mean it is their first  
15       priority.

16              We have, in general, had a proposition that  
17       has said, if we are developing the Carmacks-Stewart  
18       line, we would structure an approach that would be  
19       better for the mine than if they had to build the  
20       whole thing themselves for their own level of  
21       service, but would still be a positive  
22       contribution, present value worth, to the  
23       construction of the Carmacks-Stewart line segment  
24       that they are using. How that can be translated  
25       into a PPA is the subject of active negotiation.  
26       We had an LOI that translated it in one manner, but

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1 LOIs are, as you know, agreements to agree, and  
2 they are not the final agreement.

3 Q So I think the answer is something like, we will  
4 wait for the PPAs to come out, if they do?

5 A Well, the answer is it probably would not be -- our  
6 proposal, and the principles underlying the LOI,  
7 were that we were quite happy to have them -- if we  
8 built the Carmacks-Stewart line, 138 kV line, to  
9 Pelly, we were quite happy to have the Minto mine  
10 not pay for the full cost of the 35 kV line,  
11 ultimately net cost, from Carmacks to Minto  
12 Landing, but we absolutely need them to pay a  
13 reasonable portion of that cost for certain net of  
14 all provisions in the PPA. That is the subject of  
15 negotiation. It won't be zero and it won't be 100  
16 percent of the 35 kV line.

17 You have a 138 kV line going from Carmacks to  
18 Minto Landing, then on to Pelly; 69 kilometres, I  
19 believe, from Carmacks to Minto Landing.

20 We certainly have advised them of the cost of  
21 doing a 35 kV line for that distance, and have  
22 talked about that, if we were not around doing a  
23 138 kV line, that is what they would have to build,  
24 et cetera, et cetera. But our ultimate  
25 proposition, from Day 1, has always been, if we are  
26 building the 138 kV line, we want you to pay a

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1 reasonable portion of the costs, but it won't be as  
2 high as it would have been if we weren't building  
3 that line, but it is going to be materially greater  
4 than close to zero. And we are looking for  
5 security for that, forms of arrangement, either you  
6 give us the money up front, or you give us the type  
7 of security that we can rely on that commitment as  
8 a security for the financing of this line. And,  
9 essentially, the propositions that we have worked  
10 from conceptually are, if you are around for seven  
11 years, and you are committing to pay this much for  
12 this line, you will be buying power, probably, from  
13 us, from our grid, and providing these other  
14 ratepayer benefits that we are just talking about,  
15 so we can rely on, concurrently, not only you are  
16 covering this downside cost issue, but you are,  
17 essentially, to the best of our ability, giving us  
18 security on the benefits as well.

19 Q In the original proposal, and I may muddle this, so  
20 you can help me out, the upfront payment that was  
21 being sought, at least part of it that was being  
22 sought, from the mines, was actually a prepayment  
23 of their energy costs, and they would get rebates.  
24 Is that no longer a scenario. Because I did not  
25 see it mentioned in the update, or is it still in  
26 play, so that this capital contribution we're



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1 talking about is really a prepayment of energy, and  
2 they will get all that money back?

3 A Let me explain the original concept and say that,  
4 in my mind, it is potentially still a concept, but  
5 there are other concepts being talked about. The  
6 Minto mine's feasibility study, released in July,  
7 reflects a cost saving that they think they could  
8 get from having the grid connection, compared to  
9 diesel. They say it is about \$4 million a year,  
10 and, at present value, it is 7 1/2 percent of \$19  
11 million. We have reported on that in the update,  
12 and we have laid out some of the numbers.

13 As far as I can assess, that piece of work  
14 properly reflected the letter of intent, so the  
15 principles that I am going to talk about are  
16 reflected in that estimate. Essentially, that  
17 concept was, you will provide us with an amount of  
18 money, call it a capital contribution, call it a  
19 prepayment, we have used different language at  
20 different times, equal to the cost of a 35 kV line  
21 for this segment we are talking about, Carmacks to  
22 Minto Landing, and we will provide you -- if it is  
23 a prepayment, we will apply it to your bill, up to  
24 a limit for each year, and the limit we set was 20  
25 percent. Under that structure, if they are around  
26 a long time, they recover that amount of money. If

1 they are around for a short time, they recover  
2 less.

3 Each year that they are getting this so-called  
4 rebate, or the prepayment is being applied to their  
5 bill, we are, for sure, getting the balance of the  
6 bill in terms of the benefits ... the ratepayer.  
7 So we thought at the time, and we still think, it  
8 is a reasonable approach to giving us the security  
9 we like up front for a certain portion of the cost,  
10 but trading that off in terms of long-term benefits  
11 to ratepayers, and giving them, in the end, a  
12 better deal than if we had had to build the 35 kV  
13 line for them, that type of saving.

14 So that concept is reflected in their own cost  
15 saving estimates. We have updated those estimates  
16 to reflect the updated numbers. I did not give  
17 these in the update, but the present value savings  
18 that they would get using their methodology that  
19 they use there, given the update numbers we are  
20 using, the assumptions, would not be 19 million,  
21 because the costs have gone up, it would be more  
22 like 15 million. It is still a big number. I am  
23 not sure that that particular approach is the  
24 simplest way we can do it.

25 One of the practical problems that we could  
26 deal with, in dealing with that approach, was, we

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1 were prepared to loan them the amount of money that  
2 is involved in their commitment, given adequate  
3 security. This is not uncommon in dealing with  
4 these types of situations. But we have had some  
5 discussions about the level of adequate security, I  
6 think we are getting much closer on that subject.  
7 But there are different situations in North  
8 America, and different situations here. With their  
9 securing their financing the way they have, and the  
10 type of time periods that are being reported for  
11 paying off their bank financing, the security issue  
12 seems to be much clearer and simpler today than it  
13 might have looked a while ago.

14 Q So if I was to summarize the answer to my question,  
15 maybe it might still be in play, but it might not,  
16 depending on how you actually end up negotiating?

17 A That would be very fair.

18 Q Okay. In negotiating the purchase power  
19 agreements, are the agreements based on a single  
20 scenario, or is the negotiation based on a single  
21 scenario, or are the negotiations contemplating,  
22 I guess, in a worst case scenario -- well, are you  
23 contemplating a range of scenarios in terms of full  
24 interconnection versus single connections just of  
25 the mines? Are there contingencies in the  
26 negotiations, so that you will actually have

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1 multiple agreements, depending on what you  
2 ultimately are allowed to do before the Board, when  
3 the Board or the Minister reviews the proposal?  
4 A As I would envisage the PPAs at the moment, they  
5 would be a document, not a set of alternatives, or  
6 a multiple set of scenarios. Certainly a multiple  
7 set of scenarios is part of a process of thinking  
8 it through, and trying to make sure you have  
9 covered off various situations, but I would not, at  
10 the moment, anticipate that the document would be  
11 that type of document. One of the biggest single  
12 problems here is timing. The two different mines  
13 give us two different examples of the practical  
14 problems we face in the future trying to deal with  
15 these types of situations, and frankly, we are  
16 lucky that we have got this set of situations as a  
17 training game.

18 The Minto mine is going ahead come -- going  
19 ahead, period. And it is, thank goodness, going  
20 ahead on diesel. And if we can get there soon  
21 enough to make sense economically, before they have  
22 stopped using -- before they got too far into it to  
23 pay off the thing over a reasonable period of time,  
24 it is a pretty straightforward situation. But we  
25 have to get there by the end of 2008, type of time  
26 period, or it starts to be just silly.

1           So, if we are going to get there by  
2           third-quarter of 2008, as a target, we have to  
3           start construction in the summer/fall of 2007.  
4           There is not a lot of time for dealing with  
5           multiple document scenarios, people are looking for  
6           certainty. And for example, one of the pressures  
7           that mines come back at us with is, give me one  
8           rate. You talked about that with me yesterday, I  
9           think, let's keep it really simple; just tell me  
10          the rate.

11          There are a bunch of reasons we don't  
12          particularly want to do that. From their point of  
13          view, it makes complete sense; it is clear, we know  
14          what it is, and we can go forward together to the  
15          Board and get a rate. So we will discuss that, as  
16          to which is the most prudent and intelligent way to  
17          get a decision, quickly, that you like.

18          In the Carmacks Copper case, if they were to  
19          start operations, they want to start, they tell us,  
20          without the diesel. They probably have 8 to \$10  
21          million worth of diesel plant that they would have  
22          to build if they are going to go on diesel. By  
23          starting with us, without that, they would not have  
24          to build that plant, unlike Minto, and so we would  
25          have to be there, though, on time for when they  
26          start. The third-quarter, is all they tell us,

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1 2008. They have not got their licences yet. They,  
2 like us, are busy trying to get their licences. If  
3 they got their licences on time, they've filed for  
4 them, they would start construction at the same  
5 time we would like to.

6 Well, let me just say, so far, we have not got  
7 to the point of an LOI, and we are not doing any  
8 work on that project. And if we don't do the work  
9 on that project, and do not file applications to  
10 get the spur line done, it isn't going to be  
11 available on time. Now, I don't know -- I will  
12 just leave it at that. But these are not things  
13 that we can afford to go at, like the Aishihik  
14 re-licensing, for a decade. They have very defined  
15 time periods, either hit the window or it is,  
16 quote, your document yesterday, they are called  
17 lost opportunities. Bye bye.

18 Q There was some discussion yesterday, with YCS, with  
19 respect to the buying back diesel power from the  
20 Minto mine's back-up as a part of it --

21 A Can you give us the reference, by chance?

22 Q Sorry, the reference in the transcript?

23 A Yes.

24 Q I just got the transcript this morning, and I only  
25 mean that as a preface. The question, I think,  
26 will explain itself. I think the reference from

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1 the material was that, once they are connected, you  
2 might have the opportunity to buy back energy from  
3 them. And I think your answer yesterday, if  
4 I remember correctly, was that once they leave,  
5 there will be this diesel generator there that you  
6 might be able to buy, depending on the  
7 circumstances, as a back-up.

8 A MR. MORRISON: Not quite,  
9 Mr. Buonaguro.

10 Q I just want a clarification on what the actual  
11 proposal or proposals are.

12 A I believe -- that was certainly the question, and I  
13 believe my answer was that we were talking about  
14 that the plant, that they would put in at their  
15 start-up, they would become redundant to them,  
16 right, excepting for the back-up that they would  
17 require to keep. But they have got some six-plus  
18 megawatts of capacity that they are putting in that  
19 would become redundant when they became connected  
20 to the grid. We have talked to them about,  
21 perhaps, purchasing that plant from them if we had  
22 -- if it would help us in a capacity situation  
23 somewhere. I also believe, and Mr. Osler can jump  
24 in, but I want to be very clear, we did not talk  
25 yesterday about buying energy from them.

26 A MR. OSLER: In YUB-YEC-2-10, page

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1 3, we do talk about the Minto diesel plant, and I  
2 will just quote:

3 "The mine at Minto will be installing a  
4 prime power diesel plant to provide its  
5 needs during the period prior to the  
6 interconnection with YEC's system. Once  
7 grid power is available to the mine,  
8 about 6.4 megawatt of diesel generation  
9 will become surplus to Minto's  
10 requirements, and is currently expected  
11 to be sold and removed unless YEC makes  
12 alternate arrangements with the mine.

13 The feasibility of YEC securing access to  
14 these units for at least the near-term as  
15 a contingency option is being examined as  
16 part of the PPA negotiations for the  
17 Minto mine."

18 Those are really, I believe, four 1.6 megawatt  
19 units on trailers, so they are quite mobile. They  
20 are not all of the units in the plant, there is a  
21 bit more that they would retain for the emergency  
22 support, just for the record. The type of  
23 arrangements we have talked about would be us  
24 acquiring them, so it would be our units. We could  
25 do with them what we wanted, we can move them away  
26 from the site any time we wanted, we could sell



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1 them, et cetera, so it would be part of YEC's  
2 system, nothing to do with them providing  
3 anything.

4 The rationale as to why we might look at it  
5 is, is there some way, if they are cheap enough in  
6 the, sort of, Mirrlees category of costs, and  
7 resaleable, when we know exactly how the world is  
8 unfolding, that they would be an intelligent --  
9 I would hate like heck to see us -- have them move  
10 them out, and then the next six months later say,  
11 you know, there would be something -- some value to  
12 the system. But, at the same time, I can assure  
13 you that nobody at YEC, that I am talking to is,  
14 lusting after those four 1.6 megawatt -- what do  
15 they call them, high speed fittings? So they are  
16 not -- only under the right set of terms and  
17 conditions would we even get past having a casual  
18 chat about it.

19 Q I think that is helpful to a lot of us, in terms of  
20 understanding what the actual proposal was. The  
21 only clarification, I think you actually said --  
22 you would actually contemplate buying them while  
23 the mine is still there, not waiting until they are  
24 leaving?

25 A That is correct.

26 Q There is an actual possibility that it might be

1 done and then moved, or not moved, or something  
2 like that?

3 A Right. And it would be our units, and obviously  
4 the terms and conditions of us actually paying them  
5 would take into account how much they owed us under  
6 various arrangements, and would be part and parcel  
7 of the package, if we ever did it.

8 Q I have one more question for sure, and then after  
9 that question, I thought we might take the break,  
10 and then I can confer with my clients, see if we  
11 have any stray questions to finish up, I think we  
12 are almost done.

13 This is -- I actually ran into one of your  
14 engineers at breakfast, but I refrained from asking  
15 this engineering question because I did not want to  
16 put him in a compromising position. I think it is  
17 ultimately just for clarification for us. We  
18 understand that the Mayo-Dawson transmission line  
19 is 69 kilovolts?

20 A MR. CAMPBELL: That is correct.

21 Q And in terms of interconnecting the two grids, we  
22 couldn't understand, being non-engineers, whether  
23 that had to be upgraded to 138; if so, is that  
24 contemplated in the plan? Maybe you can explain  
25 that. Is it something that is a non-issue? I  
26 don't know. I just wanted some clarification.

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1 A MR. OSLER: Let me give you a  
2 non-engineer's point, just so that we get some  
3 certain things out, then I will let Hector handle  
4 the engineering points.

5 You take the two grids, so obviously you are  
6 going to take the voltage from one of them, so we  
7 are not doing 35 kV -- you know, 35 kV to Pelly  
8 Crossing would just contribute nothing to the  
9 long-term infrastructure ability to do the  
10 connection, as long as everybody in the room  
11 understands that. We had advice from Stantec, back  
12 a few years ago, that the cost of whether we did 69  
13 or 138 basically did not make much difference, for  
14 a variety of reasons that I cannot elaborate on,  
15 but that was the essence of the conclusion, and  
16 other people have supported that.

17 The actual proposal assumes that you do not  
18 upgrade the Mayo-Dawson system, it still stays at  
19 69 kV, and that the substation at Stewart is  
20 upgraded to accommodate the transformations  
21 necessary to go from the 138 kV to the 69.  
22 Internal to the company, in the long run, it may  
23 make sense to look at strengthening the system from  
24 Stewart to Mayo, if the power development at Mayo  
25 proceeded, in the future, to more generation there  
26 for the whole system. You might strengthen that

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1 leg, but you never would strengthen, I am advised,  
2 the leg between Stewart and Dawson. Now, that is  
3 the non-engineer's version.

4 Q Any engineering comments?

5 A MR. CAMPBELL: Actually, surprisingly,  
6 what Mr. Osler said was quite correct, even from an  
7 engineering perspective. The fact that the  
8 Mayo-Dawson line was designed, primarily from a  
9 capacity carrying capability, at 69,000 volts. And  
10 the rationale, with going to 138,000 volt, for the  
11 Carmacks-Stewart phase, again is based on a  
12 combination of factors. One of the significant  
13 changes in construction costs that has occurred,  
14 from around the year 2000 to today, is that the  
15 incremental cost, to build 69,000 volt versus  
16 138,000 volt, has basically disappeared. So much  
17 of the cost now is labour based, and it costs you  
18 the same.

19 So we are looking at 138,000 volts, both as a  
20 means of having a higher capacity on the line, and  
21 the fact that there is not a lot of  
22 interconnections along the way. The other factor  
23 you look at, from a voltage perspective, is it  
24 costs you more to step down from a higher  
25 transmission voltage to a customer. And we knew,  
26 when we were building the Mayo-Dawson line, there

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1 was a number of lodges that wanted to connect, and  
2 it is cheaper to connect the lodge, or a residence  
3 or a small community, at 69,000 volts, than it is  
4 138,000 volts. At the moment, the only known small  
5 community with connections on the Carmacks-Stewart  
6 line will, of course, be Pelly Crossing, and  
7 because we would be stepping down at Minto Landing,  
8 for the Minto spur line, there is the ability to  
9 provide relatively low cost to connect residential  
10 customers in the Minto Landing area, for example.

11 Q All right. One last little question on that, and I  
12 think you have mentioned upgrading the Stewart  
13 station, and I would assume the cost of that is as  
14 part of the proposal?

15 A MR. OSLER: Yes.

16 Q Thought so. Just wanted to make sure. All right.  
17 I think those are my questions, but like I said, if  
18 it would please the Board, we wouldn't mind taking  
19 the 15-minute break to mull over any straggling  
20 questions that we might have, but I think we are  
21 basically done.

22 THE CHAIR: Thank you very much.  
23 Based on that, we will reconvene about 20 to the  
24 hour.

25 (Proceedings adjourned at 10:25 a.m.)

26 (Proceedings resumed at 10:50 a.m.)

1 THE CHAIR: Mr. Landry, you look  
2 like you want to say something?

3 MR. LANDRY: As I indicated,  
4 I wanted to complete the undertakings at least  
5 until the most recent one.

6 So the first undertaking I would like to deal  
7 with, Madam Chair, is what I am calling Undertaking  
8 Number 3, which dealt with the issue of peak  
9 demand, request on the 2000 peak demand and 2000  
10 peak to date. And Mr. Campbell will give that, and  
11 we do have a handout, and I will get you a page  
12 reference to that. I just do not have it just on  
13 my fingertips here.

14 Here it is. It is pages, basically with  
15 preamble and questions, pages 80 to 84 of the  
16 transcript.

17 A MR. CAMPBELL: Okay, if people have  
18 that exhibit in front of them -- or has it been  
19 assigned an exhibit number already?

20 MR. LANDRY: No.  
21 A If people could turn to page 21 of the overview,  
22 which is Exhibit B-2, I think it might be helpful,  
23 of the overview, because the questions relate to  
24 some updated numbers flowing out of that table. It  
25 is a table of the comparison of the capacity  
26 criteria.

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1           So we understood the undertaking to basically  
2 be in two parts. The first part was to identify  
3 the actual 2005 peak demand seen by the WAF system,  
4 and also to provide an update of the 2006  
5 year-to-date peak demand that has been seen on the  
6 WAF grid. Just as a supplemental, there was also a  
7 request to update the surplus or shortfalls using  
8 the three different criteria, i.e., the old  
9 criteria, the loss of load expectation criteria and  
10 the N-1 criteria. So that is, in effect, what this  
11 table does. The actual 2001 peak actually occurred  
12 January 13th of -- sorry, in 2005, so the 2005 peak  
13 number shown on the original table is, in fact, the  
14 correct number. It turned out to be the actual  
15 peak demand for that year because, of course, the  
16 document was prepared the latter half of that year,  
17 but, in fact, as we know, the winter, from 2005 to  
18 2006, was a relatively mild one, so we did not set  
19 a new peak in the fourth quarter of 2005. So it is  
20 basically showing that the criteria is unchanged,  
21 of course, and the shortfalls and the surpluses are  
22 unchanged from the original filed document in B-2.

23           The peak demand to date, I'm pleased to say,  
24 was set yesterday, last night actually. And the  
25 actual peak demand was 52.9 megawatts. That, of  
26 course, includes, at this point in time, secondary

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1 sales. So I have subtracted 4 megawatts off of  
2 that number for the secondary sales coincident peak  
3 demand, and added 600 kilowatts back on for the  
4 generation that Yukon Electrical self-generate at  
5 the Fish Lake Hydro Plant. So that is how I arrive  
6 at the 49.5 estimated firm peak demand on the  
7 system for the year-to-date, 2006.

8 I thought of interest to the Board would be --  
9 that, of course, occurred yesterday with an average  
10 temperature of minus 24 degrees Celsius. There was  
11 currently a very good correlation from temperature  
12 to peak demand, that works out to 400 kilowatts per  
13 degree C change. So if you simply extrapolate  
14 minus 24 to minus 44, which was the temperature,  
15 for example, for the peak demand that occurred in  
16 2005, I believe, then you can estimate what a new  
17 peak would be if we saw some seasonally cold  
18 weather. And, again, I have done that in the third  
19 row of numbers there. So if we see some cold  
20 weather, in the minus 40 degree C range, we will  
21 see the peak demand, based on the highest one we  
22 have seen to date this year, hit 57.5 megawatts,  
23 which is within 100 kilowatts or so of what our  
24 forecast peak demand was in our original filing.

25 I would like to note that there are a number  
26 of variables that affect the peak demand on the



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1 system. It is affected first and foremost by the  
2 temperature. It is very temperature dependent. It  
3 is also affected by the day of the week. Mondays  
4 are high. Fridays are high. Statutory holidays  
5 are high. During the week, it is not quite as  
6 high. So it is a question of when you get the cold  
7 weather, what day of the week does it start at, how  
8 many days does the cold weather continue? People  
9 tend to get lazy, or they may not plug their block  
10 heaters in the first day, but by day two or day  
11 three, they will start to. You will start to see  
12 users of wood heat get a little tired or stoking  
13 the stove and start to turn on the electric  
14 baseboard heaters that they will have for backup in  
15 some of their homes. So, again, if you have a  
16 number of successive days of cold weather, the peak  
17 will creep up each day.

18 It is also affected by the time of the year.  
19 Because of the reduced daylight hours that we get  
20 in December/January, you will find more cases of  
21 where, for example, there is more street lighting  
22 staying on at the time we are seeing the peaks.  
23 Our peaks typically occur from eight to nine in the  
24 morning and from five to six at night during the  
25 week. They are at a different time on the  
26 weekends, but if the street lighting is on, that

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1 adds a couple of megawatts, if they are on at the  
2 time that the system is peaking as well.

3 So there are a whole bunch of factors that  
4 make it difficult to predict with accuracy what the  
5 peak will be every year, so we tend to average it  
6 out and pick some reasonable days, some reasonable  
7 forecasts, and so far they have been actually  
8 fairly close, subject to adjustments for weather.

9 MR. LANDRY: Can we mark that as the  
10 next exhibit, Madam Chair, please?

11 THE CHAIR: Do we have a number,  
12 Deana.

13 MS. LEMKE: B-20.

14 THE CHAIR: B-20 so marked.

15 MR. LANDRY: Thank you.

16 EXHIBIT NO. B-20:

17 YUKON ENERGY'S UNDERTAKING #3.

18 MR. LANDRY: The next undertaking  
19 was questions relating to line losses and the  
20 capability to improve on line losses, and therefore  
21 affect the issue of capacity shortfall. And these  
22 questions and preamble come from pages 84 to 86 of  
23 the transcript. And Mr. Campbell has a handout for  
24 that and will respond to that undertaking.

25 A MR. CAMPBELL: Last night, when we  
26 were trying to answer this question, we read

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1 through what we thought the questions were, so we  
2 will attempt to ask what the questions were.

3 The first question, as we understood, was what  
4 are the system losses that we have been seeing?  
5 The second question being, what are some potential  
6 projects that could be undertaken to potentially  
7 reduce system losses? The third question being  
8 more specific to transformers, and what is the  
9 potential to change out or upgrade transformers,  
10 again to reduce line losses?

11 With response to the first question, what we  
12 did was basically look yesterday at what our actual  
13 line loadings were on our main transmission lines,  
14 and we attempted there to quantify what the losses,  
15 we are currently seeing under today's weather  
16 conditions and line loadings, are. And if you add  
17 up our two major lines, for example, the loss is  
18 about 6 percent on a medium to higher loaded line,  
19 to Aishihik, and again a much higher percentage  
20 line loss number on the line to Faro, for example,  
21 the total comes up to 2.3 megawatts. So  
22 potentially on the table, if you could reduce those  
23 losses to zero, you could save 2.3 megawatts.

24 I would note, though, that is not a very big  
25 number to deal with, the potential to save  
26 2.3 megawatts. Now, I will get into the difficulty

1 in trying to achieve any realistic reductions at  
2 all.

3 There is basically -- if you want to reduce  
4 line losses, there are three primary ways that  
5 utilities look, from time to time, at doing that.  
6 The first one is to do a voltage conversion to a  
7 higher voltage. A higher line voltage reduces  
8 losses on the system.

9 The second one is to re-conductor the power  
10 line with a bigger conductor. Again, lower  
11 resistance, you reduce your losses on the line.

12 The third one is, can you install a different  
13 transformer with lower losses?

14 All of these things, in themselves, are  
15 virtually always taken into account when you are  
16 designing that equipment or that system for the  
17 first time, and there may be opportunities in  
18 optimizing the selection of equipment to achieve  
19 some losses at that point in time. Unfortunately,  
20 it is extremely expensive, with very little  
21 benefit, to upgrade after that equipment is put  
22 into service. There are some opportunities if the  
23 equipment is at the end of its useful life and you  
24 are overhauling or rebuilding it, where there are  
25 some opportunities, and we have given some examples  
26 in our response here, for example, when we re-round

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1 the Aishihik generators over the past few years.  
2 The one that was just completed, for example, for a  
3 very small incremental cost, we were able to  
4 improve the efficiency of the transformer, reduce  
5 the losses, by putting more copper into it,  
6 effectively.

7         Recently, when we have been purchasing new  
8 transformers, we certainly have been using a newer  
9 more up-to-date higher cost of line losses when we  
10 evaluate different transformers, and the purchase  
11 is made based on the life cycle cost of operating  
12 that transformer. What we have seen, for example,  
13 though, in the past year, because of the increase  
14 in copper prices and stuff, transformer costs are  
15 going up, and even using a higher cost of losses,  
16 the optimum purchase price, from a life cycle  
17 standpoint, actually has been going the other way  
18 to produce a cheaper, slightly lossier,  
19 transformer. But overall, because line losses are  
20 only a relatively small percentage of the overall  
21 capacity of the line, there tends to be -- your  
22 savings tend to be a couple of percent, on a  
23 relatively small percent to start with, so the  
24 actual savings are very small. And from a capacity  
25 standpoint, there is virtually no material way you  
26 are going to achieve any type of savings that will

1 allow you to reduce your capacity requirements.

2 MR. LANDRY: Madam Chair, can we  
3 mark that as the next exhibit, please?

4 THE CHAIR: That is B-21, so  
5 marked.

6 MR. LANDRY: Thank you.

7 EXHIBIT NO. B-21:

8 YUKON ENERGY'S UNDERTAKING #4.

9 MR. LANDRY: And the last item  
10 I have, Madam Chair, is that Mr. Morrison would  
11 like to make a correction to the record, and my  
12 reference is page 87 of the transcript.

13 A MR. MORRISON: That is correct, Madam  
14 Chair.

15 I would just like to clarify, I may have left  
16 a wrong impression yesterday when answering a  
17 question from Mr. Pinard. It is page 87, and in  
18 the first few lines of that page, I had indicated  
19 that secondary sales customers and industrial  
20 customers are the same. And I just want to be  
21 clear that industrial customers are firm customers,  
22 they are not secondary sales customers. I was  
23 trying to use as an example in terms of backup, but  
24 I think I may have kind of lumped them together  
25 where I should not have.

26 So in the secondary sales situation, when we

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1 reach the capacity in terms of the grid and we have  
2 to look at the peak, our practice has been that we  
3 have disconnected secondary sales customers if, in  
4 fact, to keep them on the system would require us  
5 to generate some diesel. So we do not provide any  
6 secondary sales if, in fact, we have to go a diesel  
7 mode to provide them.

8 In the case of industrial customers, they are  
9 firm customers. Now, in terms of an emergency, we  
10 have made it clear to the industrial customer, and  
11 we have made it clear, I think, yesterday as well,  
12 that the industrial customer would have to have its  
13 own backup supply on site. But I just wanted to  
14 make sure that we were not considering both  
15 industrials and secondaries as the same kind of  
16 customer.

17 THE CHAIR: Thank you,  
18 Mr. Morrison.

19 MR. LANDRY: Those are all of the  
20 items that I have, Madam Chair.

21 THE CHAIR: Thank you.

22 Mr. Buonaguro, are you ready to proceed?

23 Q MR. BUONAGURO: Yes, I actually have  
24 two quick questions.

25 The first I discussed with counsel. With  
26 respect to my questions on Marsh Lake and the cost

1 of Marsh Lake, I have information that there may  
2 have been a particular specific report from a firm  
3 called Gartner Lee. I do not know about it, but it  
4 may be there. And I would just ask for YEC to take  
5 a look at that to see if there was a specific  
6 consultative report done for Marsh Lake and, if  
7 there was, what the cost was.

8 A MR. MORRISON: Certainly, we will do  
9 that.

10 Q Thank you.

11 The second question also is related to my  
12 questions on Marsh Lake. We talked about the  
13 hydrology reports, and it has been explained to me  
14 that one of the reasons you do those is to try to  
15 look at potential increases to the potential output  
16 of the Whitehorse Dam. Are you able to give us  
17 what the potential is there for improvement in  
18 terms of going beyond 24 megawatts?

19 A No, we cannot at the moment, because we have not  
20 done the hydrology studies. That is part of doing  
21 the work.

22 Q I thought that might be part of the answer. Is  
23 there any sort of guesstimate, potential ...  
24 nothing?

25 A Not a good thing to guess at. I am going to try  
26 not to do that at this time if that is all right.



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1           We need to look at the system. I would like  
2 to kind of reiterate, though, that some of the  
3 reasons of doing Southern Lakes hydrology is that  
4 there are other projects potentially out there in  
5 that watershed, and we need to look at some of  
6 those as well. So it may not just relate to the  
7 Whitehorse plant, is the point I am trying to  
8 make. But I would hesitate to guess at anything at  
9 this point.

10       MR. BUONAGURO:                   Thank you. Those are  
11 my questions. The only thing I could think of is,  
12 reviewing some of the undertakings, something might  
13 pop up, and I might ask for your leave to jump in  
14 this afternoon, but I do not anticipate that being  
15 a problem. Thank you.

16       THE CHAIR:                       That would be the  
17 extent of your comments and cross-examination at  
18 this point?

19       MR. BUONAGURO:                   Yes.

20       THE CHAIR:                       I see, at this time, we  
21 have had another intervenor walk in the room who  
22 has indicated they would like to do some submission  
23 to the Board.

24           Is that true, Mr. Tuck?

25       MR. TUCK:                         That's me? Yes, I have  
26 some questions for Yukon Energy.

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1 THE CHAIR: Are you prepared to  
2 proceed?  
3 MR. TUCK: Yes.  
4 THE CHAIR: Please do so.  
5 YEC PANEL CROSS-EXAMINED BY MR. TUCK:  
6 MR. TUCK: So my name is Wayne  
7 Tuck. I am Manager of Engineering, Environmental  
8 Services, with The City of Whitehorse. And I thank  
9 the Board for allowing me to speak or ask  
10 questions. I apologize for not being here earlier,  
11 but ... working with Council and trying to figure  
12 out how we are going to pay our electric bills next  
13 year.  
14 Q MR. TUCK: I just have a few  
15 questions regarding the vision submitted by Yukon  
16 Energy. And initially I would just like to know,  
17 what is the role of the Utility Board in the  
18 reviewing of this document? Do they prepare  
19 recommendations that they are required to follow,  
20 or what is the net result?  
21 THE CHAIR: I am sorry, are you  
22 directing your question -- who are you directing  
23 your question to?  
24 MR. TUCK: To the Board, to the  
25 Chair, to you, I guess.  
26 THE CHAIR: Ms. Marx, would you

1 have some comments on that matter?

2 MS. MARX: Well, I guess this is  
3 not the appropriate time for asking questions of  
4 the Board. Your opportunity right now is to ask  
5 any questions you have of Yukon Energy. So I would  
6 ask you to proceed on that basis.

7 MR. TUCK: Excuse me, I am new to  
8 this. I just needed --

9 THE CHAIR: That's great, that is  
10 totally understandable.

11 MR. TUCK: So I was just wanting  
12 to find out what the --

13 MS. MARX: For assistance,  
14 Mr. Tuck, I can just indicate that the government,  
15 in its letter to the Board, directed the Board to  
16 submit a report, with recommendations to the  
17 government, on the Plan.

18 Q MR. TUCK: In regards to that  
19 recommendations, is Yukon Energy then obligated to  
20 follow those recommendations, or are they  
21 guidelines?

22 A MR. MORRISON: Don't ask me.

23 THE CHAIR: I don't know if the  
24 right person is here to answer that. It's a report  
25 to the Commissioner in the Executive Council, under  
26 directive. If you look in the transcripts of day

1 one, we mentioned it in the background, in our  
2 opening statement, in the background on how we have  
3 come to the point of where we are to date in this  
4 oral proceeding.

5 Q MR. TUCK: So my question then is  
6 to Yukon Energy: Are you obligated, then, to  
7 follow the recommendations that have been  
8 identified in the decision made by the Board?

9 A MR. MORRISON: It depends on what form  
10 the recommendation -- we are not obligated to  
11 follow any kind of recommendations, but we are  
12 obligated to do certain things under our Act, or  
13 under the YDC Act, and we are obligated to do  
14 certain things that the Minister has power to give  
15 us direction on, subject to that Act and the YUB  
16 Act. So it depends on what form the  
17 recommendations come in.

18 I will say that, in terms of those kind of  
19 approvals, if that is what we are talking about,  
20 that Yukon Energy is required to get approval from  
21 the Minister before proceeding with major projects  
22 such as the Carmacks-Stewart line.

23 Q Okay. Currently, from the City's perspective, we  
24 are concerned not only from the financial cost that  
25 will be impacted on the citizens of Whitehorse, but  
26 also from an environmental perspective, the impact

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1 on the continued operation of the diesel plant in  
2 the location that it is now at. We see certainly a  
3 move, and a significant move, into trying to use up  
4 as much excess hydro power as possible. And we all  
5 know that we have way more excess power in the  
6 summertime than in the wintertime. So my question  
7 to Yukon Energy is, as a Crown corporation, do you  
8 only look at financial costs of a particular  
9 project or do you consider environmental costs;  
10 i.e., not only greenhouse production issues, but  
11 pollution caused by the operation, or noise  
12 pollution, that type of thing?

13 A I think I can tell you that we look at a whole  
14 series of factors when we make decisions and we put  
15 forward proposals. We are required, as everyone  
16 else is, to follow the regulatory guidelines in  
17 terms of environmental standards. We have permits  
18 for the operation of our diesel plant. Those  
19 permits are renewed on a regular basis.

20 I think if you will refer yourself to the  
21 Plan, you will see that we don't plan, in anything  
22 in this 20-year Plan -- you know, it is our  
23 anticipation that we won't be using diesel for base  
24 load except on the margins. And if we could find a  
25 way to get hydro or some other renewable resource  
26 on stream to meet those demands, we've certainly

1 indicated, I think fairly clearly, that we would be  
2 looking at those.

3 Q And the City is certainly in support of some of  
4 that initiative in order to reduce the reliance on  
5 the diesel plant.

6 I was just curious, in the B.C. Utilities  
7 Commission decision that was made in 2003, it  
8 specifically identifies or talks about costs  
9 associated with operation of a diesel type of  
10 turbines or generating of greenhouse gases, and  
11 there is a cost perspective, and I was wondering  
12 whether you have incorporated -- I know this plan  
13 doesn't incorporate that, but whether, in fact, you  
14 would consider that type of cost as a result of the  
15 operation of a diesel plant?

16 MR. LANDRY: If I may, just to be  
17 careful again, and again, not to be critical of  
18 Mr. Tuck who I know is trying to get where he wants  
19 to go, but the premise of that, I cannot -- I am  
20 not even in a position, and I think I was at that  
21 hearing, to confirm that that is the case. I just  
22 want to be careful that that is not taken as a  
23 given. So really, I guess, what I would ask is  
24 that Mr. Tuck just ask the specific question that  
25 he has, as opposed to referencing back to the B.C.  
26 Utilities Commission ruling.

1 THE CHAIR: Mr. Tuck, would you  
2 proceed on that basis and ask the specific  
3 question, without referring back, and I concur with  
4 Mr. Landry on that point.

5 Q MR. TUCK: I was just referencing  
6 because I received a copy of the B.C. Utility  
7 Commission report from Yukon Energy, and within  
8 that they talked about clean energy and the cost of  
9 environmental, so that was my question, whether in  
10 fact they have included or considered that cost, or  
11 a type of cost applicable to the Yukon.

12 A MR. MORRISON: Madam Chair, I think  
13 just to help try to advance this, you know, at the  
14 moment, and I think there was evidence yesterday,  
15 or testimony at least yesterday, that indicates  
16 that Yukon Energy generation is 90-some percent,  
17 and I cannot remember the exact number, but -- we  
18 don't have any baseline diesel generation on the  
19 system. We would prefer not to use diesel, at all,  
20 if we did not have to. This is not a question, in  
21 some cases, of a preference. It is, in some cases,  
22 a question of cost/benefit, not just the  
23 environmental cost, but also the dollars and cents  
24 cost. So we do look at the whole package.

25 We have taken, and I think it is illustrated  
26 in this Plan that our efforts have been, or are,

1 under this plan, to enhance the capacity of the  
2 assets that we currently have, which is an economic  
3 benefit, we believe quite strongly, because we are  
4 utilizing the assets to their fullest extent and  
5 thereby extracting the greatest amount of benefit  
6 from those assets. And when we talk about using  
7 those assets, we are talking about our hydro plants  
8 and our transmission grids.

9 It is Yukon Energy's proposal to construct the  
10 Carmacks to Stewart line, and it is for several  
11 reasons. But one of those very specific reasons is  
12 so that we can reduce the potential greenhouse gas  
13 emissions that would be generated by the Minto  
14 mine, the Carmacks-Stewart line, and that continue  
15 to be generated by the community of Pelly  
16 Crossing. So I think we have demonstrated, you  
17 know, quite clearly, that our efforts, certainly  
18 within this planning period, are designed towards  
19 doing or making the best effort we can to reduce  
20 greenhouse gas potentials where possible.

21 There is no potential, in my mind, Madam  
22 Chair, to get rid of the diesel plant in  
23 Whitehorse. It is a valuable asset that is there.  
24 The best of all scenarios is that we simply  
25 maintain that plant in an emergent or back-up  
26 situation. And if we use it a few hours a year, at



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1 the moment, that is the best alternative we have,  
2 both for ratepayers and from an environmental  
3 perspective.

4 Q And I think it is great, I think it is great from a  
5 greenhouse gas reduction perspective. Certainly  
6 the changes that have been made already is  
7 significant.

8 In specific about the diesel plant where it is  
9 located in the river valley and primarily in the  
10 downtown core, have there been any discussions or  
11 plans to look, from an emergency measures  
12 perspective, in this close proximity to the dam  
13 and/or an environmental impact to the citizens who  
14 live and work and visit Whitehorse? And I am  
15 thinking specifically, like, in the wintertime when  
16 we have air temperature inversions that quite often  
17 occur, the pollution that would result as a result  
18 of the use of that diesel plant in the valley. Has  
19 there been any discussion about moving that plant?

20 A Well, no, we have not had any discussions about  
21 moving that plant, and I would be very clear with  
22 you that we have no intentions of looking at moving  
23 that plant. It is a very costly effort. There's  
24 22 and a half megawatts of capacity down there.  
25 Would we build it there, you know, if we were  
26 starting from scratch? Perhaps not. But it exists

1       there today. And the cost of moving that plant,  
2       when we don't utilize, we don't run those engines  
3       very often, it is a very minimal number of hours  
4       per year that they are utilized, and I do not think  
5       that we could come to this Board and justify the  
6       cost of moving it based on the number of hours that  
7       those diesels are used on a year-in/year-out basis.

8   Q   In regards to the long-term nature of this Plan,  
9       like looking 20 years and beyond, has there been  
10      any discussion or consideration for the concern  
11      about what fuel oil prices will be and how it  
12      relates -- I am specifically relating to other  
13      green-type projects in relation to try and minimize  
14      the operation of the diesel plant even on emergency  
15      or back-up perspective?

16  A   I think if you will recall, there are two pieces to  
17      the plan. There is a piece about projects that  
18      talk, that need to be done in the very near-term,  
19      and none of those are projects that deal with the  
20      increase usage of diesel in any way. In fact,  
21      Aishihik, again, is a project to take diesel off  
22      the margin.

23             In the future, all of the projects that we are  
24      talking about looking at, in terms of future  
25      planning, are all renewable, so we are not talking  
26      about building any diesel where we do not have to.

1 And there is no intent to run the diesel any more  
2 than we absolutely have to. So I am not sure if  
3 that helps you, but that is what the Plan  
4 contemplates.

5 Q Okay. In the 1992 Yukon Board decision, reference  
6 is made to the potential of Yukon Electrical to  
7 develop a hydro plant at McIntyre Creek, or expand  
8 their hydro facilities, which would work out to 6.4  
9 megawatts of power according to the YUB decision.  
10 And I guess the reason why it wasn't or has not  
11 been expanded on is because it related to land  
12 claims negotiations. Well, those are now  
13 completed. And Yukon Electric, I understand, has  
14 had discussions about water licence approval and  
15 expanding their facilities.

16 Have there been any discussions with Yukon  
17 Electric in coordination with what their plans are  
18 regarding power supply, so that we don't get a  
19 duplication of effort and we don't spend?

20 A Madam Chair, I want to clarify something for  
21 Mr. Tuck. First of all, the McIntyre Creek project  
22 is not 6.4 megawatts, it's .64 megawatts. It is a  
23 very small project.

24 I have no understanding from Yukon Electric  
25 that they are pursuing this project. You would  
26 have to ask them that, but it is my understanding

1 they are not pursuing it at this time.

2 Q Well, I was just going by what was quoted in the  
3 report so --

4 A Mr. Tuck, what I am trying to point out to you is  
5 your number is wrong. It is not 6.4, it is .64.  
6 It is a very small project.

7 Q Okay. It was quoted in the YUB report.

8 So granted, but it goes back to my question,  
9 has there been any discussion about -- with Yukon  
10 Electric -- you guys are both in the business of  
11 supplying some hydro power, some power supplies,  
12 and the importance of -- given that they supply  
13 power to a bunch of -- about discussions with them  
14 on plans, future plans?

15 A Madam Chair, I understand Mr. Tuck wasn't here  
16 yesterday, we did talk about some of this, but I  
17 think, just to be clear again, we have had  
18 discussions with Yukon Electrical. We are aware of  
19 no plans on their part to build a McIntyre Creek  
20 project.

21 Q Okay. So it just says in Section 7.5.3.3.2 in the  
22 YUB 1992 decision, it references 6.2 megawatts of  
23 dependable power. So that is why I thought it was  
24 --

25 A It is not that big of a project, I can tell you  
26 that.

1 THE CHAIR: That appears to be an  
2 error.

3 Q MR. TUCK: Okay, that is fine.

4 The YUB decision goes on quite a bit about  
5 industrial power producers, and establishing  
6 opportunities for that to occur. And if I ask you  
7 a question that has already been asked, you can  
8 just say it has already been asked, I am just  
9 trying to emphasize, from our perspective, the  
10 importance of certain issues, and I do not mean to  
11 get you to repeat stuff that has already been dealt  
12 with.

13 A MR. MORRISON: That is fine.

14 Q But I think, as we see more technologies and more  
15 expertise occurring in the private sector in  
16 regards to green power supplies, and either  
17 photovoltaics or wind power, technology is evolving  
18 and it is becoming much more cost-effective for  
19 IPPs to be joining in. So I am just wondering,  
20 have there been any discussions or opportunities  
21 put out there for people to start an IPP or to be  
22 an IPP?

23 A Madam Chair, when we look at IPPs -- and we talked  
24 yesterday about, you know, an IPP policy, and the  
25 fact that we don't have one, but at the moment,  
26 Madam Chair, we have a surplus of hydro on the

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1 grid. So it would not be our intent to put forward  
2 any call for people to submit proposals to us to  
3 supply power because we don't need to buy any power  
4 at the moment. We have enough power on the grid,  
5 and both grids, Mayo-Dawson and the  
6 Whitehorse-Aishihik-Faro grid.

7 We also, I can tell you, have not had anybody  
8 bring forward a proposal to us, either, to build  
9 any independent power project, of any kind, in any  
10 formal manner whatsoever. We, from time to time,  
11 get people interested in, or having ideas that they  
12 may want to expand, and they certainly come in and  
13 get information from us, which we provide on a  
14 regular basis to individuals and corporate  
15 companies who have ideas about providing power or  
16 generating power. None of those ideas have ever  
17 resulted in a proposal being given to us, and in  
18 general, it's a question of timing and opportunity  
19 being there at the same time. We don't need any  
20 power right now, so we have a surplus of  
21 renewable. So when do we need it? And I think we  
22 have outlined very clearly in the Plan that, absent  
23 mine contracts, or mine customers, we have enough  
24 power for quite a while in the system that we  
25 have. So it is a little bit of balancing both of  
26 those, and I think at the moment we are pretty clear

1 that, if people come to us with a concept and an  
2 idea, we are prepared to discuss it with them. We  
3 have no aversion and no policy that prohibits us  
4 from doing that.

5 But Cam, do you want to add a little bit?

6 A MR. OSLER: Just add two things.  
7 One, if you are interested in sort of a review of  
8 what our thoughts have been on this matter, you can  
9 look at Section 5 of the original document, the  
10 January document, pages 5-36 through 38. And in  
11 that, my second point is, YEC, when there was power  
12 needs in the system with diesel, did set out its  
13 own call for expressions of interest to all  
14 parties, in 1996, for any ability for IPPs to come  
15 forward anywhere in the Yukon to help generate  
16 power, and it got a bunch of proposals at the  
17 time. Unfortunately, all of that got supplanted by  
18 the shut-down of the Faro mine early in the next  
19 year.

20 Q And regarding that, and I understand that you have  
21 signed, now, an agreement, or there is an agreement  
22 with the Minto project, and they will be required  
23 to ensure that in the -- when available -- hydro  
24 power is not available, that they have to generate  
25 their own power. So is there an opportunity with  
26 their own -- is that correct; that when there is

1 not availability of hydro power, that they have to  
2 generate their own power on site?

3 A MR. MORRISON: Let me say it my way,  
4 Madam Chair. The mine, as part of any agreement  
5 that we reach with them, and we have not reached  
6 any conclusive agreement with them, will be  
7 required to have on-site back-up power that they  
8 will be required to use in an emergency situation.

9 Q I am not talking about emergency situation, I am  
10 talking about -- I mean, I certainly agree that  
11 emergency situation, everybody has to be on side,  
12 but I am talking about, we know that there is a  
13 surplus of hydro power in the summertime and in the  
14 fall. In the winter and the springtime, when water  
15 levels are low, or water levels are low  
16 historically, then there may be an issue, then,  
17 that we don't have enough hydro power, in which  
18 case, then, you may be required to activate the  
19 diesel plant in Whitehorse to service the mines up  
20 in --

21 A And Madam Chair, we have, in front of us, a  
22 proposal to build the Aishihik Third Turbine to  
23 mitigate that need to burn diesel at the margins.

24 Q Okay. So it is still the issue, it is going to  
25 take a couple of years, because I think you are  
26 building -- isn't it the first phase coming from



- 1 Whitehorse, upwards to Minto, and not coming the  
2 other way around?
- 3 A No, the proposal is to build the project from  
4 Carmacks, north.
- 5 Q Right. But the surplus of power, hydro power, is  
6 actually --
- 7 A The surplus --
- 8 Q -- from Mayo. Is there not --
- 9 A No, no.
- 10 Q -- surplus of power in Mayo?
- 11 A Madam Chair, there is a surplus of hydro on the  
12 Mayo-Dawson system, and it is a small amount of  
13 surplus. There is a large amount of surplus on the  
14 Whitehorse-Aishihik-Faro system. We don't propose  
15 to sell power to Minto mine, or any mine, including  
16 Pelly Crossing, from the Mayo system. We plan to  
17 use the surplus available in the  
18 Whitehorse-Aishihik-Faro system.
- 19 Q So they are provided -- required to have their own  
20 back-up power supply. So is there an IPP  
21 opportunity for them to join in, and when there is  
22 a shortage of hydro power or an emergency  
23 situation, that you might be able to buy power from  
24 them as a result of their expenditures of diesel?
- 25 A Well, Madam Chair, if we need to generate diesel on  
26 the margins, we would buy our own diesel, we would

1 use our own diesel power, we would not need to buy  
2 it from the Minto mine. So I am not sure if that  
3 is the question or not, but --

4 Q Well, it was just an opportunity for an IPP, they  
5 have this facility that is sitting there and if  
6 they are generating -- I am not sure what the  
7 excess power --

8 A But we have enough diesel in our system, we would  
9 not buy it from somebody else.

10 Q But you still have to provide power and line losses  
11 all the way out to their facility up in Minto,  
12 right?

13 A Yes, that is true, but, you know, we would have to  
14 buy it from them. We already have it. We have  
15 plant in place.

16 Q And the concern that I have raised already is about  
17 operating the diesel plant in Whitehorse, in the  
18 river valley, more often as a result of the need to  
19 supplement a shortage of hydro power?

20 A I probably get a glare from my legal counsel for  
21 this, but you are saying it is better to -- it is  
22 okay to burn diesel out at the Minto mine, but it  
23 is not okay to burn diesel in Whitehorse.

24 Q Generally, I would think so. I mean, I'm not a --  
25 but I would think so, yes.

26 So, in 1992, there was reference to the amount

1 of peak power that we generate, in 1992, compared  
2 to what, currently, the Whitehorse area requires,  
3 and it has gone from 40 to 46. And so, over the  
4 last 15 years, we have seen a significant increase  
5 in power consumption, whereas, there has not been a  
6 significant increase in population. I am not sure  
7 exactly numbers, but from our perspective in '92,  
8 the population is fairly similar to what it is  
9 today. So what we have seen is more consumption,  
10 higher consumption of power, and the Utility Board  
11 decisions that were made -- identified a number of  
12 recommendations, like seven or eight  
13 recommendations, regarding the importance of demand  
14 side management, and the need that Yukon Energy and  
15 Yukon Electrical need to work together to reduce  
16 requirements of people on using power, and try to  
17 reduce their loading in order to avoid having to do  
18 undue changes. And I am curious as to what DSM  
19 programs have been undertaken, to any significant  
20 degree, and do you not see a need to expand that in  
21 order to meet the terms of the 1992 decision.

22 MR. LANDRY: And Madam Chair, I will  
23 assume, for the purposes of the record, that it is  
24 the question at the end that has to be answered,  
25 without all the assumptions or preamble that went  
26 with that question.

- 1 THE CHAIR: Mr. Tuck, would you  
2 like to proceed on that basis?
- 3 MR. TUCK: Sure. So I am not sure  
4 -- I thought it was all connected, so I am not  
5 sure what you are trying to state there.
- 6 THE CHAIR: Would you like to  
7 restate your last question, your final question,  
8 possibly just for clarification, for clarification  
9 purposes, unless --
- 10 MR. TUCK: I have to restate it?
- 11 MR. LANDRY: I think Mr. Morrison  
12 understood the question.
- 13 A MR. MORRISON: I am okay. Madam  
14 Chair, you know, again, from a DSM perspective, you  
15 know, a major program that we have in place is our  
16 secondary sales program. Major DSM program. If  
17 the reference to the 1992 Board report has not  
18 addressed, in the question, the fact that we have  
19 -- (a), we have a surplus of hydro on the system,  
20 and we had a surplus of hydro on the system at that  
21 time, and we were advised by the Board, at that  
22 time, not to proceed with expenditures related to  
23 DSM because we had a surplus of hydro on the  
24 system, so that would be my answer.
- 25 A MR. OSLER: And just because it  
26 might come to you later, there is a second question

1 that has been put to us by others, Yukon  
2 Conservation Society, if you have a surplus of  
3 hydro, why are you not at least looking at DSM for  
4 this capacity shortage that we do have. If you  
5 were here, we have been through the fact that we  
6 have a capacity shortfall which is different than  
7 an energy surplus, and we have been talking about  
8 that a bit, if you look at the answer to  
9 YCS-YEC-2-A2 to find out what our response was to  
10 that question. So, bottom line, we have looked at  
11 DSM from the point of view of implementing it for  
12 helping people use surplus hydro, that is called  
13 secondary sales. We have paid attention to the  
14 Board's direction and common sense, that if you  
15 have an energy surplus, you do not want people to  
16 consume less energy at the moment because it will  
17 just raise rates, and we have looked specifically  
18 at the issue of, is there a DSM plan that we should  
19 be thinking about to deal with the capacity  
20 shortfall. And the bottom line is, it would be too  
21 expensive, and there isn't a practical set of  
22 options there.

23 Q Certainly I can understand that if you have a  
24 surplus of hydro power, like you have had before, I  
25 can understand that you do not want to spend money  
26 in order to actually make less money.

1           However, it takes time for people to change  
2           the way they operate, the way the facilities they  
3           operate, the mechanism, and it takes time, and you  
4           cannot expect all of a sudden, I would think,  
5           unless you can correct me, but you cannot expect  
6           the people to, once you are in a deficit situation,  
7           to get people to change their habits, because it  
8           takes time and material to make those changes. So  
9           I would think, in order to be proactive, you need  
10          to start now, don't you think?

11 A MR. MORRISON:                    To start now doing  
12          what?

13 Q To start, and should have been starting, doing some  
14          DSM programs in order to release that. I know, I  
15          can understand that your issue -- you are saying  
16          secondary power, you are actually increasing power  
17          consumption, not dealing with trying to reduce  
18          peoples' reliance on power. With secondary power  
19          sales, it is a way to increase -- it was intended  
20          to increase your revenue, which was otherwise being  
21          dumped down the stream, and it actually doesn't  
22          work towards reducing peoples' reliance on power?

23 A MR. MORRISON:                    I am not sure, Madam  
24          Chair, if I have a question, so if you have a  
25          question, I would be happy to answer it.

26 Q So basically, so my question is, are there no plans

1 now? You are saying that the Board has told you  
2 not to spend money on DSM programs?

3 A I said to you -- Madam Chair, what I referred to  
4 was in the 1992 Board -- 1993 Board Order that was  
5 -- that Mr. Tuck was using. I just further  
6 pointed out to him that we had been advised that  
7 DSM expenditures, while we had a surplus of hydro,  
8 were not a prudent expenditure on behalf of  
9 ratepayers. We have no plans, at the moment, to  
10 look at further DSM because, again, we still have a  
11 continual surplus of hydro on the system.

12 A MR. OSLER: If I could just add one  
13 thing, from the '92 experience, '92 hearing, one of  
14 the things we talked about, that creates electrical  
15 requirements, the long run, but doesn't make a lot  
16 of sense, efficiency-wise, was electric heating,  
17 particularly if we end up with diesel back on the  
18 margin. Not much that Yukon Energy can do about  
19 whether residential or commercial -- residential  
20 people, in general, served by another utility,  
21 install electric heating because it is convenient,  
22 or the rates are being subsidized, or whatever.  
23 Government could; it could institute ground rules.  
24 Other people could. That's the type of thing that  
25 10 years, 15, 20 years from now, if diesel was on  
26 the margin, a lot of new electric heating would

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1     come under purview of people at this review level,  
2     as to what effects it was having on overall  
3     efficiency, environmental emissions, whole bunch of  
4     other things. So it doesn't mean, because Yukon  
5     Energy is not able, under its mandate and the  
6     things it can deal with cost-effectively, to pursue  
7     these measures that you are talking about right  
8     now, it doesn't mean that somebody else could not  
9     or should not.

10  Q I am glad you brought up the issue of electric  
11     heat, because the City is actually seeing  
12     commercial businesses and residential businesses  
13     installing electric heat. And certainly with Yukon  
14     Energy's desire or drive to make as many sales of  
15     hydro power as possible to make up that shortfall,  
16     certainly we are sort of seeing a repeat of the  
17     electrical heat problems we had -- well, before  
18     I came in the '80s. And Recommendation Number 31  
19     from the Utility Board specifically says that you  
20     and Yukon Electric need to take steps to reduce and  
21     eliminate electric heat supply, and that is one of  
22     your conditions. And certainly one of the issues  
23     that I would see an Energy Solution Centre or that  
24     type of DSM program that, if you had implemented  
25     and expanded on, we may not have seen that issue.  
26     And I was just wondering like, what steps have you,



1 in accordance with Recommendation 31, taken to  
2 ensure that electric heat is not provided?

3 A MR. MORRISON: Madam Chair, Mr. Tuck  
4 is referring to customers of Yukon Electric. The  
5 City of Whitehorse is served by Yukon Electric, and  
6 I think he is referring to this new building that  
7 is going up. If you look out the window here,  
8 there is a condo unit here, and other commercial  
9 buildings, that we understand are being built with  
10 electric heat services in them. Those are  
11 customers of Yukon Electric, you are going to have  
12 to ask them.

13 I would also point out to you that the issue  
14 of electric -- or the Energy Solution Centre  
15 reference that you have mentioned to us is, you  
16 know, if the Energy Solution Centre has programs  
17 related to the reduction of electric heating, or  
18 the reduction of greenhouse gases, or whatever  
19 their programs are, those are their programs, and  
20 you are going to have ask them those questions, but  
21 that is not Yukon Energy.

22 Q I thought they reported to you?

23 A No, they report to the Department of Energy, Mines  
24 and Resources, they are part of the Yukon  
25 Government.

26 Q Okay. But anyways, in regards, it doesn't

1 specifically say, it just says Recommendation 31.  
2 If you read it, it says you are supposed to work  
3 cooperatively with Yukon Electric to come up with  
4 ways of doing that. So, basically, nothing has  
5 been done on that?

6 A Madam Chair, just to be clear, these are -- this is  
7 not a Yukon Energy service area, and I would not  
8 presume to be telling Yukon Electric how to deal  
9 with their customers in their service area.

10 Q Well, okay. As this Resource Plan comes to 20  
11 years and beyond, and you spoke about an energy --  
12 and I can appreciate that you said that there is an  
13 energy surplus but not a capacity surplus.  
14 However, in order to -- you have a wind generation  
15 power.

16 A Right.

17 Q And certainly, in the long term, as ways of  
18 reducing increasing capacity, or using less water,  
19 or hydro power in conjunction with an operation of  
20 a green power, is there not an opportunity to, in  
21 the long term, expand and take advantage of changes  
22 to wind power so that it can provide and meet up  
23 the shortfall, in the event, to avoid the operation  
24 of the diesels, even to a small degree that has  
25 been mentioned before?

26 A Madam Chair, wind power provides no capacity

1       enhancements at all. Capacity enhancements have to  
2       be a plant that can be reliably turned on at the  
3       time that you need the capacity. Wind power is  
4       only energy. You cannot count on it. I am happy  
5       to have either Mr. Campbell or even Dr. Billinton,  
6       if he would like, to talk about the reliability  
7       issues around wind power.

8               I have advised Mr. Tuck previously that wind  
9       power is also very, very, very expensive. We  
10       believe that our cost of producing a kilowatt hour  
11       of wind on the Haeckel Hill wind plant is about 31  
12       and a half cents a kilowatt hour. So not only is  
13       it not economic, it is not reliable in terms of  
14       capacity. The capacity factor with which the two  
15       plants on Haeckel Hill operate is about 15 percent,  
16       and I do not think that anybody wants us to take  
17       the chance that the wind power is going to -- the  
18       wind is going to operate if we have an emergency.  
19       So, therefore, you cannot count wind as capacity,  
20       it provides energy only.

21   Q   And I agree. And I think I prefaced my comment  
22       about that I recognize that it is not a capacity  
23       provision. It is more or less the opportunity to  
24       use some power, whatever is available, in order to  
25       reduce the reliance on the diesel system.

26   A   And Madam Chair, I think that is exactly what we do

1 with our two plants. We have no potential new wind  
2 sites advanced to a stage where we would look at  
3 them in terms of bringing them on stream. We have  
4 looked at a number of sites, you know, over the  
5 years, but nothing that gives us any commercial  
6 viability. We still are doing some work on a site  
7 at Ferry Hill, which is, to put it in perspective  
8 for people, is just outside of Stewart Crossing,  
9 but right adjacent to the grid, the Mayo-Dawson  
10 grid, and there may be, in the future, some  
11 potential there. But we have no other sites in our  
12 inventory that would be at a stage, or in a  
13 condition, where we would think about developing  
14 them.

15 Q Well, I am not sure, so can you provide that  
16 information? You said it was 31 cents-per-kilowatt  
17 hour, is that information that can be provided, and  
18 is that something you can also compare to what it  
19 operates in regards to operation of the diesel  
20 plants, for example, when it runs?

21 A Madam Chair, if I could get some clarification  
22 around that, I have already provided it, that is  
23 the analysis that we have done, that is the cost.  
24 In comparison to the diesel, diesels are virtually  
25 -- you know, maybe Mr. Campbell can help me with  
26 the number -- 80 or 90 percent reliable, or

1 operating factor?

2 A MR. CAMPBELL: 90 percent.

3 A MR. MORRISON: 90 percent is the  
4 operating factor that we use for a diesel plant,  
5 and our experience with the Haeckel Hill plant is  
6 that it is about 15 percent.

7 Q So is it a part of the cost in regards to where  
8 this Haeckel Hill -- the fact that there's only two  
9 windmills and the fact that the access road is not  
10 all that accessible, and certainly with an  
11 availability of surplus hydro power, there is not a  
12 desire to keep it in operating condition?

13 A Well, Madam Chair --

14 THE CHAIR: Mr. Tuck, I think the  
15 question has been answered.

16 Q Okay, that is fine. That was it. That was all of  
17 my questions. Thank you.

18 THE CHAIR: Well, I note it is  
19 quarter to twelve, and it is probably an  
20 appropriate time to break for lunch. In that case,  
21 we had talked about reconvening at 1:30, shall we  
22 make that quarter after one?

23 (Proceedings adjourned at 11:50 a.m.)

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